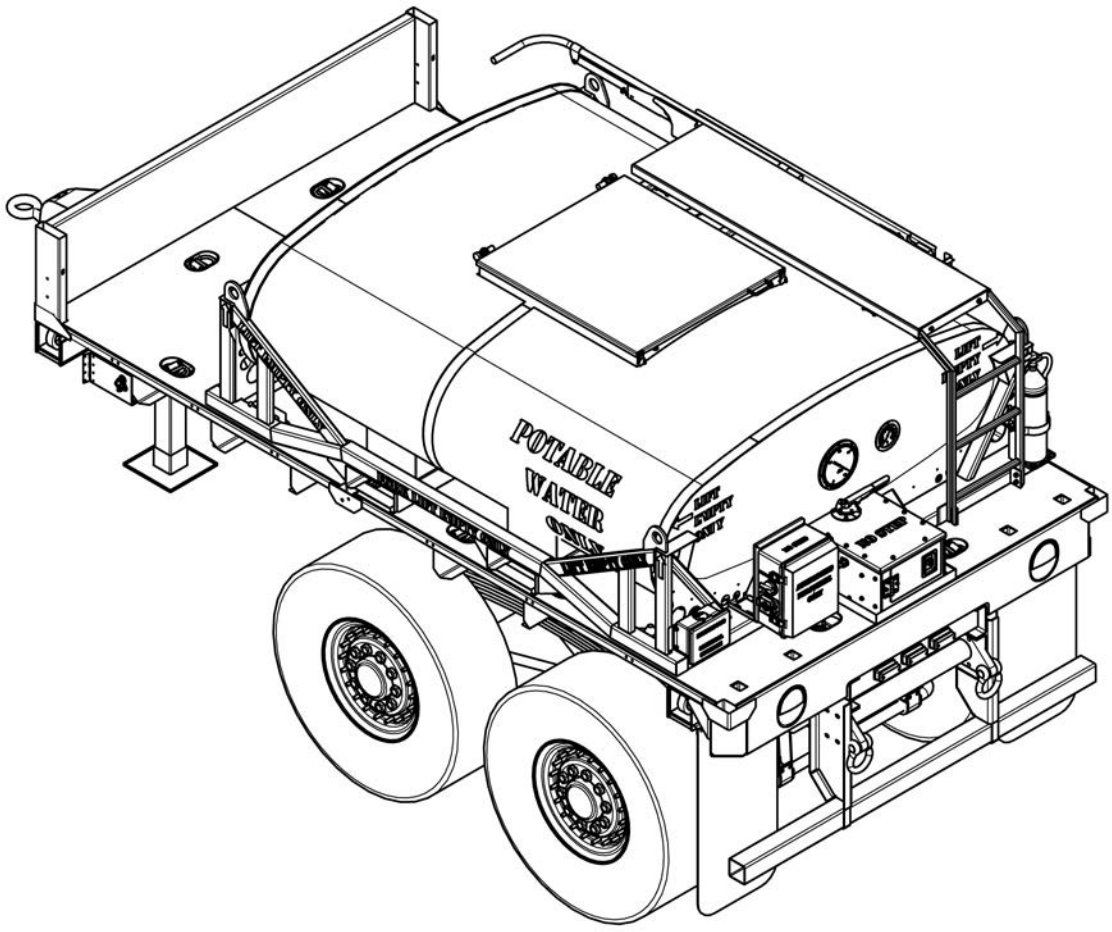
TM 10-2330-402-13&P

TECHNICAL MANUAL
OPERATOR AND FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR

UNIT WATER POD SYSTEM (CAMEL II)
NSN 2330-01-580-7654
MODEL CAMEL II 800



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HEADQUARTERS, DEPARTMENT OF THE ARMY
21 JULY 2014

WARNING SUMMARY

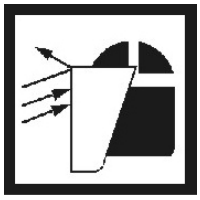
This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in death or serious injury to personnel. Also included are explanations of safety and hazardous materials icons used within this technical manual.

First Aid

FOR MORE INFORMATION ON FIRST AID, REFER TO FM 4-25.11.

EXPLANATION OF SAFETY WARNING ICONS

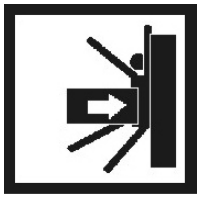
ELECTRICAL - electrical wire to arm with electricity symbol running through body shows that shock hazard is present.



FLYING PARTICLES - arrows bouncing off face with face shield shows that particles flying through the air will harm face.

HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.

HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.

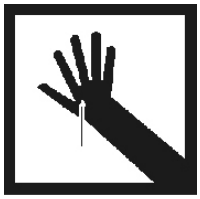


HEAVY PARTS - heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.

WARNING SUMMARY - Continued

HELMET PROTECTION - arrow bouncing off head with helmet shows that falling parts present a danger.

MOVING PARTS - hand with fingers caught between rollers shows that the moving parts of the equipment present a danger to life or limb.



SHARP OBJECT - pointed object in hand shows that a sharp object presents a danger to limb.

SLICK SURFACE - wavy line on floor with legs prone shows that slick floor presents a danger for falling.

GENERAL SAFETY WARNINGS DESCRIPTIONS

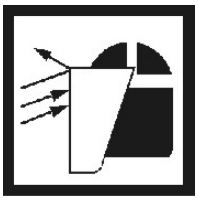
WARNING

ELECTRICAL SHOCK

Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before working on electrical components. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

WARNING SUMMARY - Continued

WARNING



PERSONAL PROTECTIVE EQUIPMENT

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/ shield, gloves, etc). Failure to comply may result in injury to personnel.

WARNING

HAND INJURY

Do not place hands near pintle towing hook when coupling/uncoupling trailer drawbar assembly and pintle towing hook. Towing vehicle may move suddenly. Failure to comply may result in serious injury or death to personnel.

WARNING SUMMARY - Continued

WARNING

CRUSHING INJURY

Trailer must be secure. Chock wheels when stopped on incline. Trailer may roll. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

Do not back up trailer without an assistant. Operator has limited vision while backing trailer. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

Do not straddle or drive on sides of sand mounds. Loose sand will not support trailer on steep slopes. Trailer may roll over. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

Personnel must not occupy towed trailer during towing operation. Towed trailer may become disconnected while being towed. Failure to comply may result in serious injury or death to personnel.

Position of assistant must be known at all times. Do not allow anyone to stand between towing vehicle and trailer, behind trailer or under trailer neck during coupling. Failure to comply may result in serious injury or death to personnel.

Trailer must be secure. Trailer wheels must be chocked before coupling, uncoupling or when trailer is parked. Trailer wheels may roll if they are not chocked. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

When moving the prime mover into position, be sure that the ground is stable enough to support the weight of the fully loaded vehicle and that the surrounding terrain is passable. When stopped, always chock the wheels before filling the tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

Personnel working at the water loading site must avoid placing themselves in a position where equipment malfunction or sudden equipment movement would injure them. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

When prime mover is stopped, always chock the wheels before filling the tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

Do not place hands near pintle hook when coupling/uncoupling trailer drawbar assembly and towing vehicle pintle hook. Towing vehicle may move suddenly. Failure to comply may result in injury to personnel.

WARNING SUMMARY - Continued

WARNING

HELMET AND PERSONAL PROTECTIVE EQUIPMENT

Ensure all personnel are clear of lifting device when raising or lowering water tank assembly. Always use protective gloves and a hard hat when working with lifting straps and cables. Failure to comply may result in injury to personnel.

WARNING

FALL AND HAND INJURY

DO NOT lean on the handrail. The handrail is not load bearing. Failure to comply may result in serious injury or death to personnel.

There is a pinch hazard when deploying or stowing the handrail. Use caution and wear protective gloves. Failure to comply may result in injury to personnel.

WARNING

PERSONAL PROTECTIVE EQUIPMENT

Wear heavy leather-palmed work gloves when handling cable. Cables can become frayed or contain broken wires. Never let moving cable slide through hands, even when wearing gloves. Failure to comply may result in injury to personnel.

WARNING SUMMARY - Continued

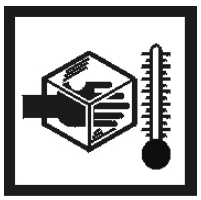
WARNING

SLICK SURFACE

Exercise caution when working on the catwalk and ladders where snow or ice exists. Failure to comply may result in injury to personnel.

EXPLANATION OF HAZARDOUS MATERIALS ICONS

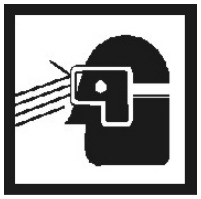
CHEMICAL - drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



CRYOGENICS - hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.

EAR PROTECTION - headphones over ears shows that noise level will harm ears.

EXPLOSION - rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition or high pressure.



EYE PROTECTION - person with goggles shows that the material will injure the eyes.

WARNING SUMMARY - Continued

EXPLANATION OF HAZARDOUS MATERIALS ICONS - Continued

FIRE - flame shows that a material may ignite and cause burns.

POISON - skull and crossbones shows that a material is poisonous or is a danger to life.

VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.

HAZARDOUS MATERIALS DESCRIPTIONS

WARNING

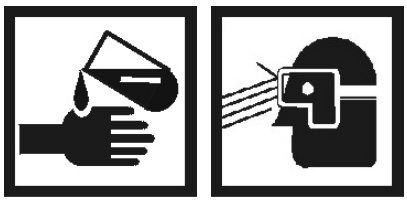
HAZARDOUS WASTE DISPOSAL

When servicing this equipment, performing maintenance or disposing of materials such as lubricants, battery acids, batteries or CARC paint, consult your unit/local hazardous waste disposal center or safety office for local regulator guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845. Failure to comply may result in injury to personnel.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTIONS - Continued

WARNING



FIRE EXTINGUISHER

Fire extinguisher contents are under pressure. Do not puncture, incinerate or discharge into another person's face. DO NOT store at high temperatures above 120°F (49°C). Failure to comply may result in serious injury or death to personnel.

WARNING

INHALING TOXIC AGENTS

Avoid inhaling the extinguishing agent. Avoid inhaling smoke and fumes. All fires release toxic substances that are harmful. DO NOT remain in a closed area after use. Evacuate the area immediately and ventilate thoroughly before reentering. Failure to comply may result in serious injury or death to personnel.

WARNING

CAUSTIC CLEANING SOLUTIONS

Protective gloves, clothing and/or respiratory equipment must be worn whenever caustic, toxic or flammable cleaning solutions are used. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTIONS - Continued

WARNING

ADHESIVES, SOLVENTS AND SEALING COMPOUNDS

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesive, solvent or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

WARNING

CLEANING COMPOUND SOLVENT, TYPE III

If personnel become dizzy while using Cleaning Compound Solvent, Type III, immediately get fresh air and medical help. If Cleaning Compound Solvent, Type III, contacts skin or clothes, flush with cold water. If Cleaning Compound Solvent, Type III, contacts eyes, immediately flush eyes with water and get medical attention. Failure to comply may result in serious injury or death to personnel.

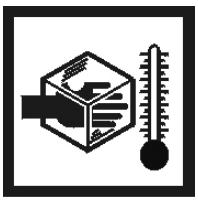
Cleaning Compound Solvent, Type III (MIL-PRF-680, Type III) is TOXIC and flammable. Wear protective goggles and gloves; use only in well-ventilated area; avoid contact with skin, eyes and clothes and do not breath vapors. Keep away from heat or flame. Never smoke when using Cleaning Compound Solvent, Type III. Failure to comply may result in serious injury or death to personnel.

A fire extinguisher must be available and ready during all cleaning operations involving Cleaning Compound Solvent, Type III. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTIONS - Continued

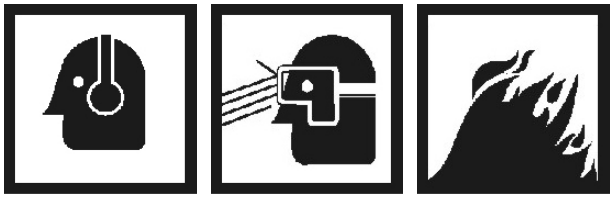
WARNING



EXTREME COLD

Do not touch extremely cold metal below -26°F (-32°C). Bare skin may freeze to cold metal. Failure to comply may result in injury to personnel.

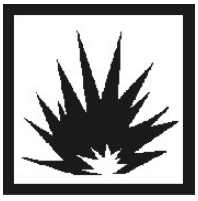
WARNING



STEAM CLEANING

Steam cleaning creates hazardous noise levels and severe burn potential. Eye, skin and ear protection is required. Failure to comply may result in injury to personnel.

WARNING



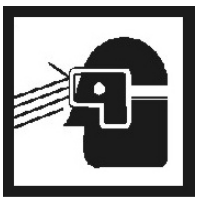
PRESSURE BUILDUP

If bottom filling tank with an auxiliary pump rated greater than 125 gpm (473 Lpm), ensure manhole cover is loosened/opened to prevent pressure buildup inside tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTIONS - Continued

WARNING



EYE PROTECTION

Wear eye protection when drilling out rivets. Failure to comply may result in injury to personnel.

Adhesive sealant (MIL-S-46163) can damage your eyes. Wear safety goggles/glasses when using; avoid contact with eyes. If sealant contacts eyes, flush eyes with water and get immediate medical attention. Failure to comply may result in injury to personnel.

Wear eye protection when using high pressure water to clean trailer. Failure to comply may result in injury to personnel.

WARNING

FIRE

Never use fuel to clean parts. Fuel is highly flammable. Failure to comply may result in serious injury or death to personnel.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTIONS - Continued

WARNING

VENTILATED AREAS

All cleaning procedures must be accomplished in well-ventilated areas. Failure to comply may result in injury to personnel and/or damage to equipment.

A confined space entry permit is required before entering the water tank. No one is to enter the tank without a permit, the required training and necessary personal protective equipment. Failure to comply may result in serious injury or death to personnel.

Inhalation of calcium hypochlorite causes irritation to eyes, nose, mouth, throat and lungs. It may also cause burns to respiratory tract, which can result in shortness of breath, wheezing, choking, chest pain and lung failure. Failure to comply may result in serious injury or death to personnel.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

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Original 21 July 2014

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HEADQUARTERS, DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 21 JULY 2014

TECHNICAL MANUAL

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FOR

UNIT WATER POD SYSTEM (CAMEL II)
NSN 2330-01-580-7654
MODEL CAMEL II 800

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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Current as of 09 May 2014

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Index

HOW TO USE THIS MANUAL

This manual is designed to help you operate the Camel II and to perform operator troubleshooting and maintenance on the equipment. If at any time you are unsure how to use this manual or you cannot locate the information you need, notify your supervisor.

This manual contains instructions for safe and efficient operation of the Camel II, manufactured by Choctaw Defense. These instructions provide the user with a general knowledge of the equipment, characteristics, and operating procedures of the Camel II. Troubleshooting and maintenance procedures are provided at field maintenance levels.

This manual provides operating instructions for circumstances that may be encountered during mission operations. Emergencies, adverse weather, terrain, or other conditions may require changes to these basic procedures.

Operating instructions for most circumstances will be provided, but the user's best guide will be knowledge of the vehicle and its operation. In an emergency, a quick instinctive response based on that knowledge is essential.

This manual is written in work package format:

1. Chapters divide the manual into major categories of information (e.g., Introductory Information, Equipment Description, Theory of Operation, Operator Instructions, Troubleshooting Procedures, Maintenance Instructions, and Supporting Information).
2. Each Chapter is divided into work packages, which are identified by a 4 digit number (e.g., 0001, 0002, etc.) located on the upper right-hand corner of each page. The work package page number (e.g., 0001-1, 0001-2, etc.) is located centered at the bottom of each page.

CONTENTS OF THIS MANUAL

WARNING SUMMARY

A Warning Summary is located at the beginning of this manual. Become familiar with these warnings before operating or performing operator troubleshooting or maintenance on the equipment.

TABLE OF CONTENTS

A Table of Contents, located in the front of the manual, lists all chapters and work packages in the publication. The Table of Contents provides a quick reference to assist in finding the required information.

The Table of Contents also provides Reporting Errors and Recommending Improvements information and DA Form 2028 addresses for the submittal of corrections to this manual. If you cannot find what you are looking for in the Table of Contents, refer to the Alphabetical Index (if applicable) at the back of the manual.

CHAPTER 1 GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION

Chapter 1 provides General Information, as well as the characteristics, capabilities, and features of the Camel II. Also included in Chapter 1 is the Camel II data and theory of operation.

CHAPTER 2 OPERATOR INSTRUCTIONS

Chapter 2 provides Operator Instructions. The Operator Instructions explain and illustrate all operator controls and indicators and contains a location and description of decal and data plates. It also describes how to perform all operating procedures for the Camel II: Operation Under Usual Conditions and Operation Under Unusual Conditions.

HOW TO USE THIS MANUAL - Continued

CHAPTER 3 OPERATOR TROUBLESHOOTING PROCEDURES

Chapter 3 provides Operator Troubleshooting Procedures for various malfunctions that may occur during equipment operation. It also contains a Troubleshooting Symptom Index. If the Camel II malfunctions, this index should always be consulted to locate the appropriate troubleshooting procedure.

CHAPTER 4 FIELD TROUBLESHOOTING PROCEDURES

Chapter 4 provides Field Troubleshooting Procedures for various malfunctions that may occur during equipment operation. It also contains a Troubleshooting Symptom Index. If the Camel II malfunctions, this index should always be consulted to locate the appropriate troubleshooting procedure.

CHAPTER 5 OPERATOR MAINTENANCE INSTRUCTIONS INCLUDING PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Chapter 5 lists Operator Maintenance Instructions and Preventive Maintenance Checks and Services (PMCS). These PMCS procedures are performed before equipment operation, while it is being operated, and after the mission is completed. The PMCS table lists the item to be checked or serviced, the check or service procedure, and the criteria for determining whether the equipment being checked is ready for its mission. Maintenance procedures are also included in this chapter.

CHAPTER 6 FIELD MAINTENANCE INSTRUCTIONS INCLUDING PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Chapter 6 lists Field Maintenance Instructions and Preventive Maintenance Checks and Services (PMCS). These PMCS procedures are performed before equipment operation, while it is being operated, and after the mission is completed. The PMCS table lists the item to be checked or serviced, the check or service procedure, and the criteria for determining whether the equipment being checked is ready for its mission. Maintenance procedures are also included in this chapter.

CHAPTER 7 PARTS INFORMATION

Chapter 7 lists Parts Information. This chapter includes Repair Parts and Special Tools List (RPSTL) Introduction and Repair Parts and Special Tools List. Parts Information should be used to provide any additional parts data required to order the part. Parts Information should also show the relationship of a part to other parts of the system or equipment and enhance or clarify the supporting operator, descriptive or theory of operation data.

CHAPTER 8 SUPPORTING INFORMATION

Chapter 8 includes References, listing the regulations, forms, pamphlets, field manuals, technical bulletins, and technical manuals that apply to this manual. Chapter 8 also includes Components of End Item (COEI) and Basic Issue (BII), Additional Authorization List (AAL), Expendable/Durable Items List for supplies and materials, Tool List, and any additional supporting information.

FEATURES OF THIS MANUAL

Unless another MOS is specified in the initial setup of a work package, all tasks are to be performed by a non-specific MOS Operator or a 91B Wheeled Vehicle Mechanic, as required.

HOW TO USE THIS MANUAL - Continued

Warning, caution, and note headings and certain essential information are printed in **BOLD** type for clarity. This is critical data to ensure personal safety, prevent damage to the vehicle, and clarify unique data or procedures used on the Unit Water Pod System (Camel II).

NOTE

A **WARNING** indicates a hazard that may result in death or injury to personnel.
A **CAUTION** is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.
A **NOTE** is a statement containing information that will make the procedures easier to perform.

Statements and words of particular interest may be printed in CAPITAL LETTERS to create emphasis.

Within a procedural step, reference may be made to another work package in this manual or to another manual. These references indicate where you should look for more complete information.

If you are told: (WP 0017), go to WP 0017 in this manual for instructions on this service.
If you are told: (For complete information on a procedure, refer to TM X-XXXX-XXX-XX), go to the References work package in Chapter 8 Supporting Information (WP 0185) for complete information.

Illustrations are placed after and as close to, the procedural steps to which they apply. Callouts placed on the art are text or numbers.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION

OPERATOR MAINTENANCE
GENERAL INFORMATION

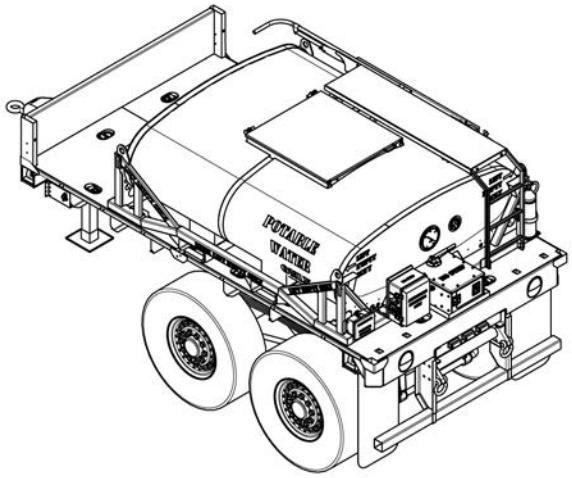
SCOPE

Type of Manual. This manual is for use in operating and performing field maintenance on the Camel II.

Model Numbers and Equipment Names. Model Camel II 800, Camel II.

Purpose of Equipment. Provides the capability to receive, store, and dispense potable water to units at all echelons throughout the battlefield. It will provide a maneuvering company more than a two day supply of water at a minimum sustainment consumption rate. The water tank assembly is mounted on a M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), allowing for better transportability on and off road by utilizing the Family of Medium Tactical Vehicles (FMTV).

Special Inclusion. For operation and maintenance of the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), refer to TM 9-2330-394-Series manuals.



800-0001

Figure 1. Camel II.

MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army (DA) forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750–8, The Army Maintenance Management System (TAMMS) Users Manual; DA PAM 738–751, Functional Users Manual for The Army Maintenance Management System (TAMMS), or AR 700–138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your Camel II needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance.

ALL non-Aviation/Missile EIRs and Product Quality Deficiency Report (PQDRs) must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: https:// www.pdrep.csd.disa.mil/.

If you do not have Internet access, you may submit your information using an SF 368 PQDR. You can send your SF 368 using e-mail, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so the problem can be corrected and improvements can be made to prevent the problem in future items. The term “corrosion” means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The US Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt, or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of inter-granular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It’s usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue.

Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/ performing maintenance.

SF Form 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Command decision, according to the tactical situation, will determine when the using organization is to destroy a trailer. A destruction plan will be prepared by the using organization, unless one was prepared by a higher authority. For destruction procedures, refer to TM 750-244-6.

PREPARATION FOR SHIPMENT

For information regarding preparation for storage or shipment, refer to (WP 0054)

LIST OF ABBREVIATIONS/ACRONYMS

NOTE

Refer to ASME Y14.38-1999 for standard abbreviations.

ABBREVIATION/ACRONYMS	DEFINITION
AAL	Additional Authorization List
AEPS	Army Electronic Product Support
BII	Basic Issue Items
BT	Bottle
C	Operator/Crew Maintenance
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CBRN	Chemical, Biological, Radiological and Nuclear
CN	Can
COEI	Components of End Item
CPC	Corrosion Prevention and Control
D	Depot Maintenance
DA	Department of Army
DR	Drum
EA	Each
EDRS	Electronic Deficiency Reporting System
EIR	Equipment Improvement Recommendation
F	Field Maintenance
FGC	Functional Group Code
FST	Field SanitationTeam
ft	foot/feet
GFCI	Ground Fault Circuit Interrupter
gal.	gallon

LIST OF ABBREVIATIONS/ACRONYMS - Continued

ABBREVIATION/ACRONYMS	DEFINITION
GMTK	General Mechanic's Tool Kit
gpm	gallons per minute
H	Below Depot Maintenance
HPDs	Hearing Protection Devices
hr	hour
HTH	Calcium Hypochlorite
IAW	In accordance with
Illus. No.	Illustration Number
in.	inch
kPa	kilopascal
L	Specialized Repair Activity
lb-ft	pound-foot
LI	Lubrication Instruction
Lpm	liter(s) per minute
MAC	Maintenance Allocation Chart
mL	milliliter
MTVT	Medium Tactical Vehicle Trailer
N•m	newton-meter
NHA	Next Higher Assembly
NSN	National Stock Number
O	Service Maintenance
oz	ounce
PK	Pack
PMCS	Preventive, Maintenance, Checks and Services
psi	pounds per square inch

LIST OF ABBREVIATIONS/ACRONYMS - Continued

ABBREVIATION/ACRONYMS	DEFINITION
PQDR	Product Quality Deficiency Report
qt	quart
Qty	Quantity
RO	Roll
Rqr	Required
SATS	Standard Army Tool Set
SMR	Source, Maintenance and Recoverability
TAMMS	The Army Maintenance Management System
TMDE	Test, Measurement and Diagnostic Equipment
TOE/MTOE	Table of Organization and Equipment/Modified Table of Organization and Equipment
TU	Tube
U/I	Unit of Issue
U/M	Unit of Measure
UOC	Usable on Code
UUT	Unit Under Test
V	volt
VAC	Volts Alternating Current
VDC	Volt Direct Current
WP	Work Package

Should you require any transportability data or modal pamphlets/publications please visit the web site at: http://www.tea.army.mil/

END OF WORK PACKAGE

OPERATOR MAINTENANCE
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

Characteristics

The water tank assembly is designed to attach to the bed of the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT). The Camel II is designed to receive, store, and dispense potable water.

Capabilities

1. Capable of carrying 800 gal. of water.
2. Has integrated freeze protection and is operational from -25°F (-31.66°C) to 130°F (54.44°C).
3. Contains a single point dispensing for operation in a cold environment and six filling positions for filling canteens and five gal. water cans in usual operating conditions.
4. Contains space and weight allowance for future add-on capabilities such as chilling, pumping, circulation, and on-board power generation.

Features

1. Temperature gauge for reading the water temperature within the tank from ground level.
2. Water level indicator assembly for visibility of the amount of water within the tank from ground level.
3. Two heating blankets and heat trace to prevent water from freezing during operation in a cold environment.
4. Large manhole cover for rapid filling and easy access to the inside of water tank.
5. 2 in. dispensing port for dispensing from ground level and bottom filling of the water tank.
6. The tank assembly is easily removed from the MTVT for maintenance purposes.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Curbside and Rear Views

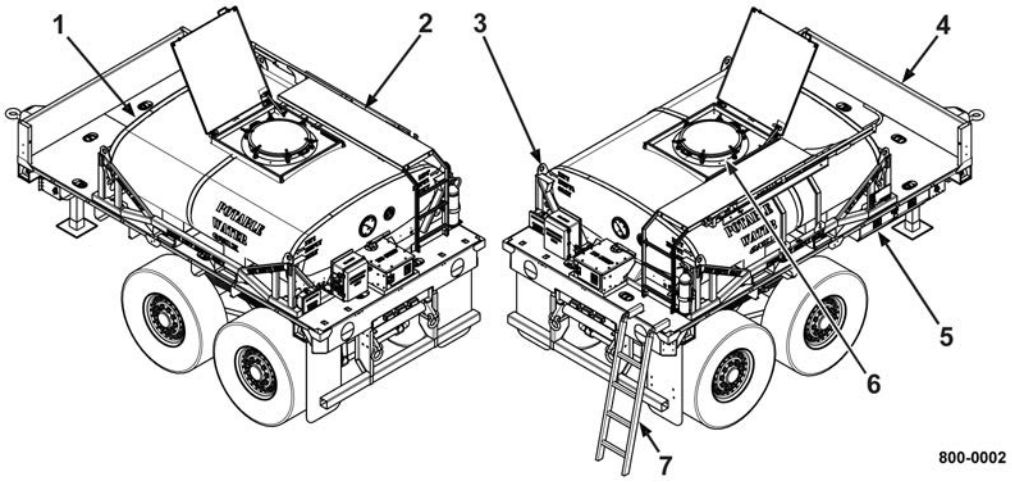


Figure 1. Curbside View.

Table 1. Curbside View Components.

KEY	COMPONENT	DESCRIPTION
1	Tank	Eight hundred gal. water tank with integrated freeze protection. It has a water tank that is surrounded by insulation and protected by an outer shell.
2	Catwalk	Provides a means for the operator to access the spill box and manhole cover. It has a hand rail to provide fall protection and can be raised and lowered by the operator.
3	Frame	Welded frame to support the water tank and catwalk. Has integrated forklift slots for transportation and removing from M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT). Provides a means for the water pod to be mounted on the Trailer.
4	Trailer	Provides a means to transport the water pod.
5	Stowage Cabinets	Has four stowage cabinets integrated for stowage of Basic Issue Items (BII).
6	Manhole	Provides easy access to internal tank. It is utilized for top filling.
7	Trailer Ladder	Provides access to deck of trailer.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

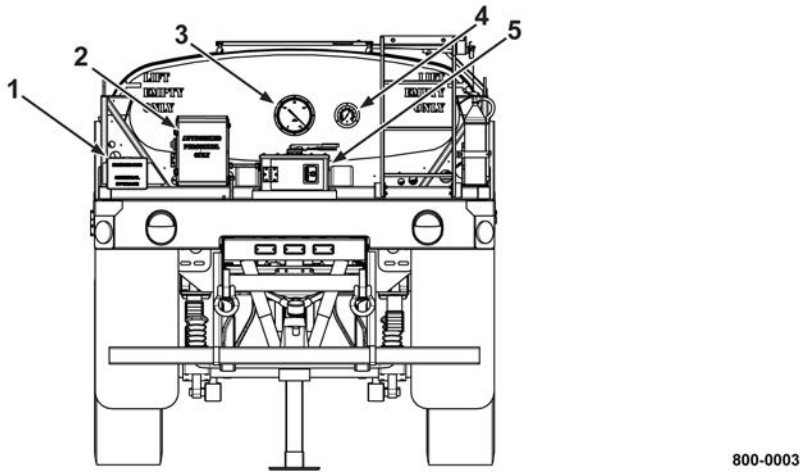


Figure 2. Rear View.

Table 2. Rear View Components.

KEY	COMPONENT	DESCRIPTION
1	Chemical Box	Contains chemicals for treating and purifying water.
2	Electrical Control Box	Contains a thermostat and controls that operate the heating blankets and heat trace for cold weather environment.
3	Water Level Indicator Assembly	Indicates the volume of water contained within water tank.
4	Water Temperature Indicator	Indicates temperature of water contained within the water tank.
5	Discharge Box	Equipped with a water dispensing valve, handle, and connection for attaching dispensing systems and dispensing water from water tank.

EQUIPMENT DATA

Overall dimensions and weights for the Camel II, are listed in Tables 3 and 4. Camel II performance data provides information for MTVT (M1095) are listed in Table 5.

Table 3. Overall Dimensions.

Overall Length	Overall Width	Lifting Arms Max Width	Deck Height-Curb	Deck Height-Gross	Overall Height
225.9 in. (573.8 cm)	95.4 in. (242.3 cm)	139.5 in. (354.3 cm)	62.8 in. (159.5 cm)	60.5 in. (153.7 cm)	102.0 in. (259.1 cm)

EQUIPMENT DATA - Continued

Table 4. Weights.

	Tongue	Axle	Total
Curb Weight	1162 lb (527.07 kg)	5551 lb (2517.89 kg)	12265 lb (5563.31 kg)
Gross Weight	1528 lb (693.09 kg)	8706 lb (3948.98 kg)	18941 lb (8591.49 kg)

Table 5. Camel II Performance Data.

Maximum Speed (primary roads, 2% grade)	Maximum Speed (primary roads, 3% grade)	Maximum Grade Ability	Maximum Side Slope Ability	Maximum Side Slope Speed	Maximum Departure Angle	Maximum Fording Depth (without preparation)	Minimum Ground Clearance
45 mph (72 km/h)	40 mph (64 km/h)	30%	30%	5 mph (8 km/h)	40 degrees	60 in. (152.4 cm)	14.5 in. (36.8 cm)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
THEORY OF OPERATION

PRINCIPLES OF OPERATION

Electrical power is provided by the external power supply of 240 VAC single phase and 12 VDC from the prime mover. Water distribution is provided through main dispensing valve to the dispensing system.

INTRODUCTION

The Camel II provides the capability to receive, store, and dispense potable water. The basic system has freeze protection and six filling positions. The features of the system are the tank, dispensing system, electrical system, and M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT).

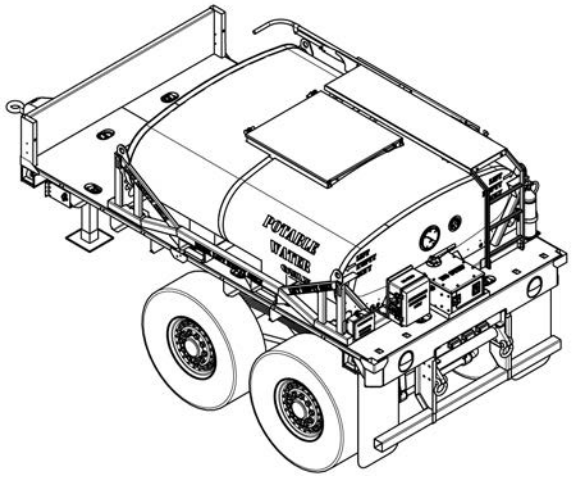


Figure 1. Camel II.

ASSEMBLIES OR OPERATIONAL FEATURES OF COMPONENTS

1. Tank. Capable of receiving, storing, and dispensing 800 gal. of potable water. Has integrated freeze protection for operation in cold environments. Has large manhole cover, for easy access of receiving water, enclosed within a spill box on top of the tank.

2. Dispensing System. Has a single point dispensing system for operation in cold environments. Has a six point dispensing system for normal operations that can fill canteens and five gal. water cans. It is capable of being set up on almost any terrain.

3. Electrical System. The electrical system is powered by an external 240 VAC single phase source and operates the Camel II freeze protection through different power switches. The heat trace can also be powered through the prime mover.

4. M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT). The M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT) is the transporting platform for the water tank assembly.

END OF WORK PACKAGE

CHAPTER 2

OPERATOR INSTRUCTIONS

OPERATOR MAINTENANCE
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

NOTE

The controls and indicators for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must become familiar with all the controls and indicators for the trailer prior to performing any operation.

CONTROLS AND INDICATORS

This section identifies the locations and describes the functions of controls and indicators used to operate the tank assembly.

Table 1. Controls and Indicators

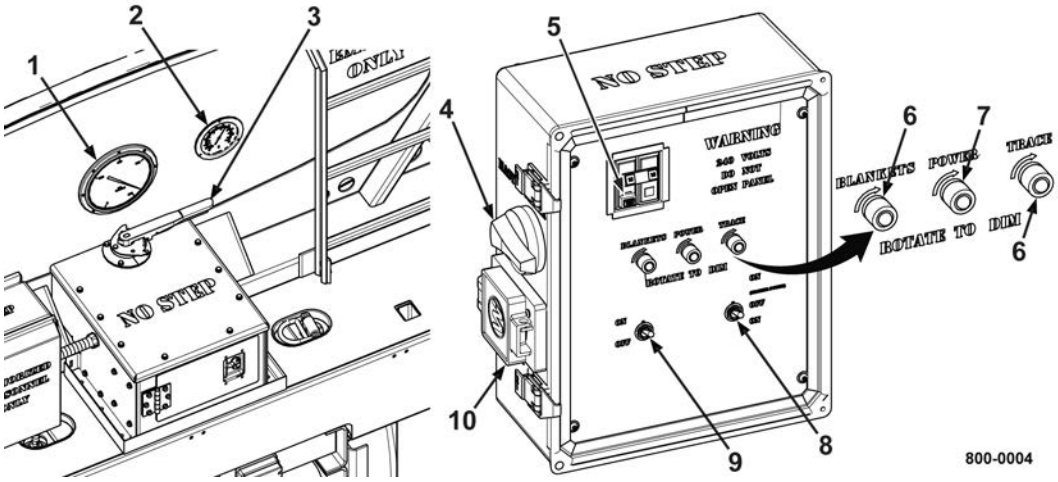


Figure 1. Controls and Indicators.

Key	Control/Indicator	Function
1	Water Level Indicator	Provides a visual indication of the amount of water within the tank.
2	Water Temperature Indicator	Shows temperature of sensor attached to the internal water tank.
3	Main Dispensing Valve	Controls the flow of water from the tank.
4	Main Power Switch	Controls the power to the electrical control box, when connected to external power source. Must be turned on by the operator to prevent water from freezing while operating within a cold environment.
5	Ground Fault Circuit Interrupter (GFCI) Circuit Breaker	Protects operator from electrical shock.

Table 1. Controls and Indicators - Continued

Key	Control/Indicator	Function
6	Heat Trace and/or Heat Blanket Indicator Light	Indicates that the heat trace and/or heat blanket circuit is operating. There is one light for each circuit.
7	Power Indicator Light	Indicates that external power is present and main power switch is on.
8	Heat Trace Toggle Switch	Turns the power on for utilizing the heat trace. Power to the switch is provided from an external power source or 12 VDC from the prime mover.
9	Heat Blanket Toggle Switch	Turns the power on for utilizing the heat blankets under the tank. Power to the switch is provided from an external power source.
10	External Power Plug	Is the receptacle for attaching the power cord.

END OF WORK PACKAGE

FIELD MAINTENANCE
OPERATION UNDER USUAL CONDITIONS - OPERATING PROCEDURES

INITIAL SETUP:

Tools and Special Tools
Adjustable, Wrench, 10 in. (WP 0188, Table 2, Item 1)
Hammer, Dead Blow (WP 0188, Table 2, Item 20)

Personnel Required
Two

References
TM 9-2330-394-13&P
WP 0006

References (cont.)
WP 0007
WP 0009
WP 0010
WP 0011
WP 0012
WP 0013
WP 0052

Equipment Condition
Perform BEFORE PMCS (WP 0050)

OPERATING WATER TANK

NOTE

Operation Under Usual Conditions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Usual Conditions for the trailer prior to performing any operation.

General

This section contains instructions for safely operating the water tank assembly under usual conditions. Unusual conditions are defined and described in (WP 0009) through (WP 0012) of this chapter.

Before operating a new or reconditioned Camel II, make sure Field Level Maintenance services the unit.

OPERATING PROCEDURES

Operate the water tank in accordance with (IAW) operating procedures.

Site Requirements

When preparing to fill or discharge the tank be sure that terrain is reasonably level and the ground is stable enough to support the weight of the fully loaded unit.

END OF TASK

Filling Water Tank

NOTE

Immediately after filling operations, perform During PMCS (WP 0050).

This section contains instructions for safely filling the Camel II. The Camel II can be filled through the bottom 2 in. dispensing port or through the manhole opening.

END OF TASK

Filling Tank through Top Manhole Cover

WARNING

- Trailer must be secure. Always chock the wheels before filling the tank.
- Use extreme care to ensure that no foreign material enters water tank. The highest sanitary standards must be followed when handling drinking water.
- If water tank is used for NON POTABLE WATER, water tank must be so marked. Do not let hoses or other filling equipment enter or rest against manhole opening causing contaminants to come in contact with potable water.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- For cleaning and disinfecting procedures refer to (WP 0052).
- Ensure main dispensing valve is in closed position before filling water tank.

1. Place trailer ladder into operation (WP 0006).
2. Rotate and secure handrail (Figure 1, Item 1) in the up position (WP 0007).
3. Lift spill box lid (Figure 1, Item 2) and ensure spill box locking arm (Figure 1, Item 3) is in locked position.

NOTE

- When the manhole cover is opened to its maximum travel the hinge will drop into a locked position. You must lift the manhole cover straight up before closing to release the locked hinge.
- BII dead blow hammer may be used to tap latching bolts tighter as needed.

4. Loosen and rotate six manhole cover latching bolts (Figure 1, Item 4) and raise manhole cover (Figure 1, Item 5) to open locked position.
5. Fill water tank through manhole opening.
6. Have assistant monitor water level indicator (Figure 1, Item 6). When water level indicator reaches 800 gal. stop filling operation. Do not overfill.

Filling Tank through Top Manhole Cover - Continued

7. Lift manhole cover (Figure 1, Item 5) straight up and rotate forward to closed position.
8. Rotate six manhole cover latching bolts (Figure 1, Item 4) up onto manhole cover (Figure 1, Item 5) and tighten firmly in a cross pattern.
9. Close spill box lid (Figure 1, Item 2).
10. Rotate and secure handrail assembly (Figure 1, Item 1) to down position (WP 0007).
11. Stow trailer ladder (WP 0006).

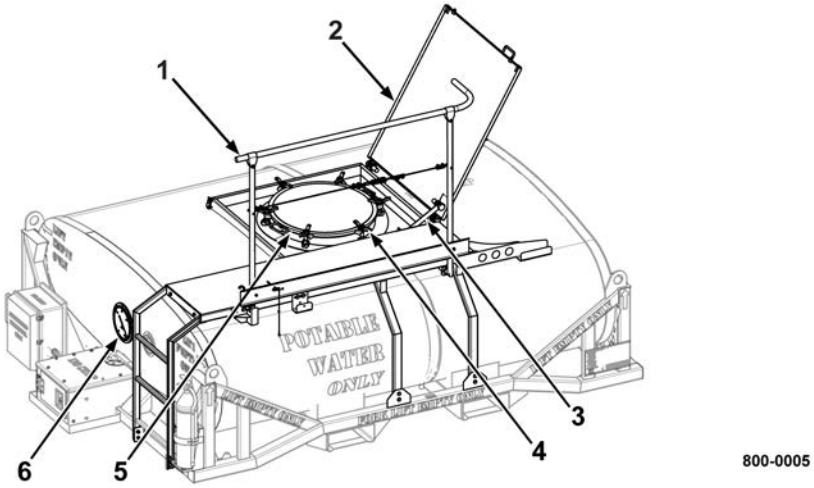


Figure 1. Filling Tank through Manhole Cover.

END OF TASK

Filling Tank through Bottom Dispensing Port

WARNING

- Trailer must be secure. Always chock the wheels before filling the tank.
- Use extreme care to ensure that no foreign material enters water tank. The highest sanitary standards must be followed when handling drinking water.
- If water tank is used for NON POTABLE WATER, water tank must be so marked.
- If bottom filling tank with an auxiliary pump rated greater than 125 gpm (473 Lpm), ensure manhole cover is loosened/opened to prevent pressure buildup inside tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- For cleaning and disinfecting procedures refer to (WP 0052).
- When stowing dispensing system and dispensing hose, ensure all water is drained prior to placing in stowage.
- Deploy trailer ladder (WP 0006) as needed.

1. Open discharge housing access door (Figure 2, Item 1) and remove end cap (Figure 2, Item 2).
2. Connect auxiliary pumping equipment to dispensing port (Figure 2, Item 3).
3. Open main dispensing valve (Figure 2, Item 4) and start filling operations using auxiliary pump.

CAUTION

Monitor water level at all times, do not overfill. Failure to comply may result in damage to equipment.

4. Monitor water level indicator (Figure 2, Item 5) as tank fills.
5. As tank approaches 800 gal. slowly begin closing main dispensing valve (Figure 2, Item 4).
6. Close main dispensing valve (Figure 2, Item 4) when tank reaches 800 gal.
7. Immediately shut off auxiliary pump.
8. Relieve pressure in dispensing hose (Figure 2, Item 6) by opening and closing the main dispensing valve (Figure 2, Item 4) to equalize pressure before disconnecting.
9. Disconnect dispensing hose (Figure 2, Item 6) and drain before replacing end cap (Figure 2, Item 2) and placing in storage.
10. Close and secure discharge box door (Figure 2, Item 1).

Filling Tank through Bottom Dispensing Port - Continued

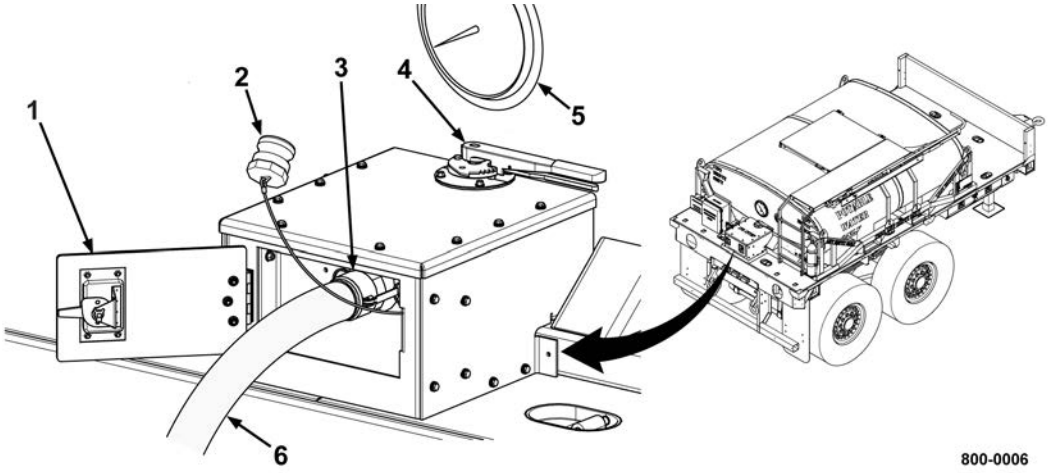


Figure 2. Filling Tank through Bottom Dispensing Port.

11. Stow trailer ladder (WP 0006).

END OF TASK

Dispensing Potable Water

NOTE

- When stowing dispensing system and dispensing hose, ensure all water is drained prior to placing in stowage.
- If there is significant drop in flow rate during dispensing operations, loosen six manhole cover latching bolts to relieve pressure inside tank.

1. Remove dispensing stand assembly (Figure 3, Item 1), trailer mount bracket (Figure 3, Item 2), six point dispensing system (Figure 3, Item 3), 66 in. dispensing hose (Figure 3, Item 4), and 46 in. dispensing hose (Figure 3, Item 5) from BII stowage (WP 0013).

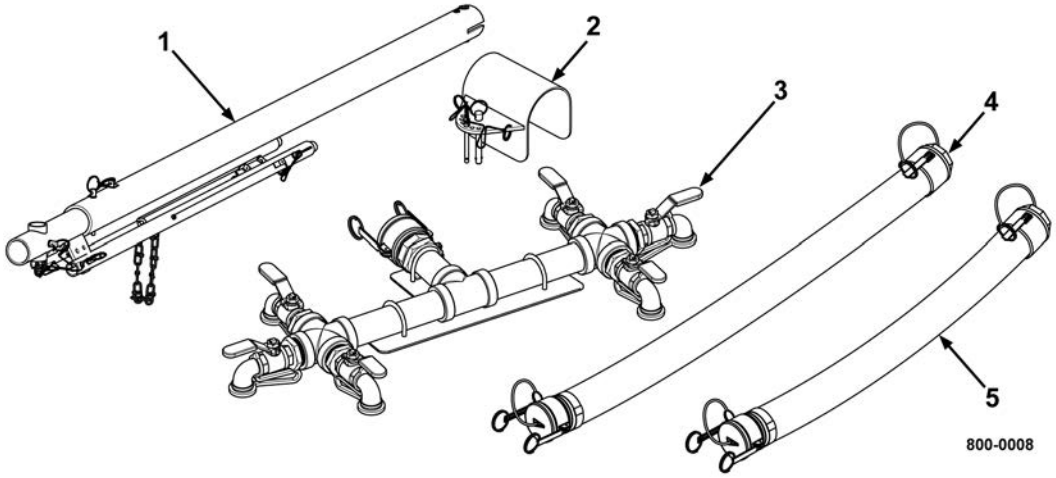


Figure 3. Dispensing Components.

Dispensing Potable Water - Continued

2. Place trailer mount bracket (Figure 4, Item 1) onto under-ride bar (Figure 4, Item 2) of trailer.

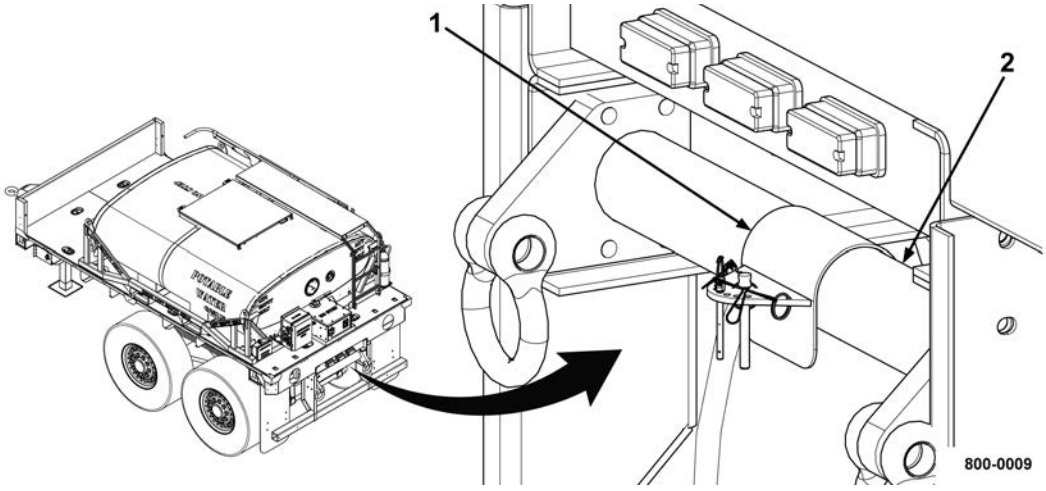


Figure 4. Mount Bracket Installation.

3. Remove retaining pins (Figure 5, Item 1) and deploy dispensing stand legs (Figure 5, Item 2) on dispensing stand (Figure 5, Item 3). Insert retaining pins.

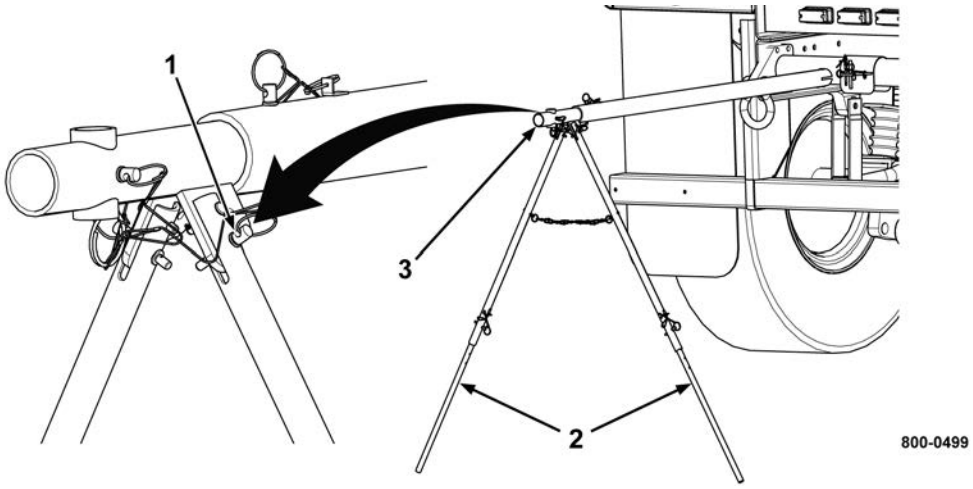


Figure 5. Deploy Dispensing Stand Legs.

Dispensing Potable Water - Continued

4. Remove retaining pins (Figure 6, Item 1) from trailer mount bracket (Figure 6, Item 2). Connect dispensing stand (Figure 6, Item 3) to trailer mount bracket and insert retaining pins.

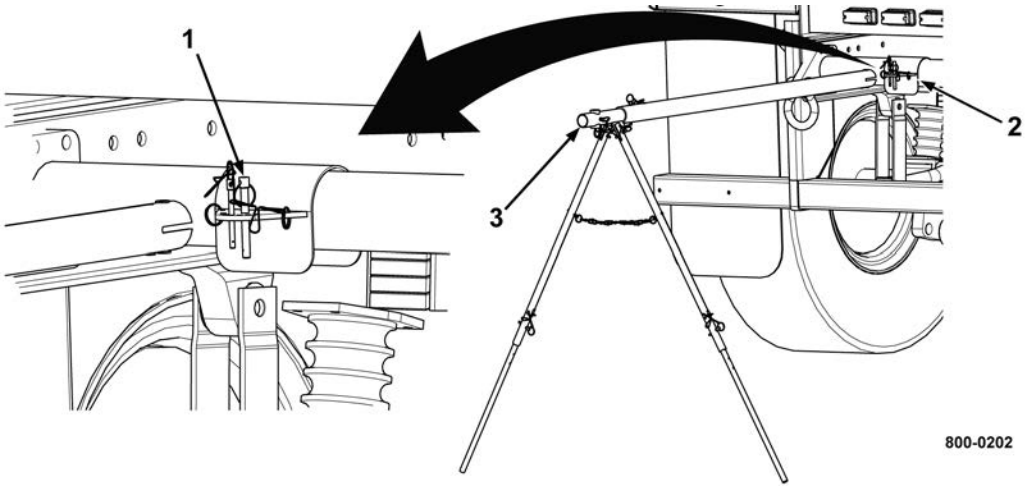


Figure 6. Dispensing Stand Connection.

5. Remove retaining pin (Figure 7, Item 1) and extend dispensing stand (Figure 7, Item 2). Insert retaining pin.

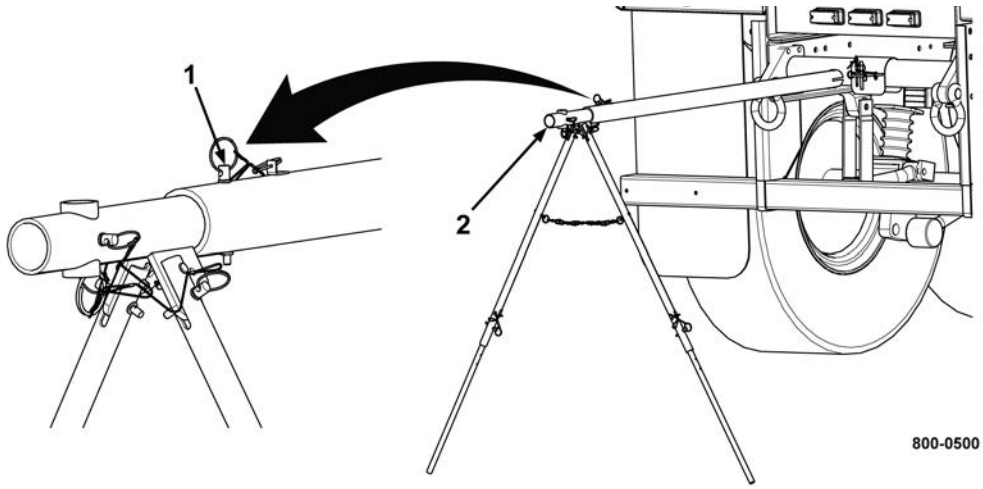


Figure 7. Extend Dispensing Stand.

Dispensing Potable Water - Continued

6. Remove retaining pin (Figure 8, Item 1) and secure six point dispensing system (Figure 8, Item 2) onto dispensing stand (Figure 8, Item 3). Insert retaining pin.

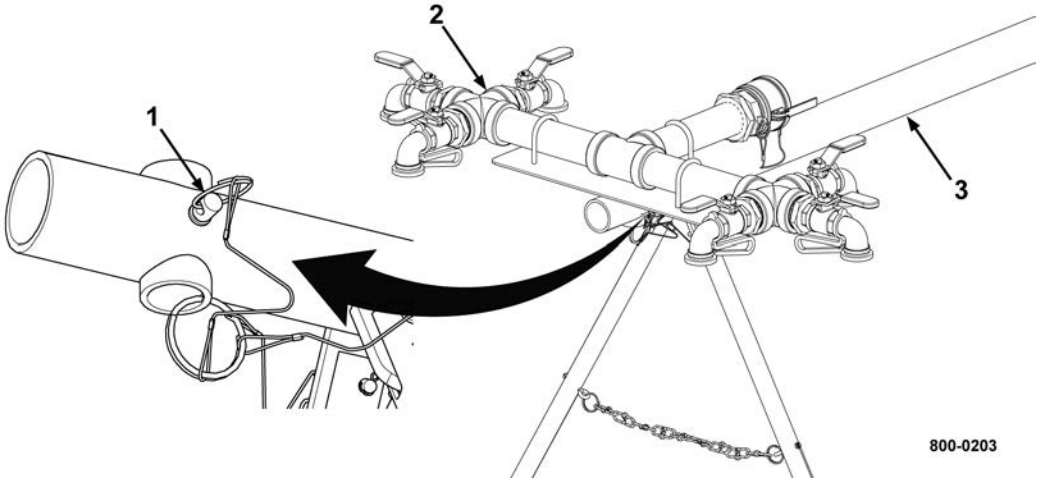


Figure 8. Attach Dispensing System to Dispensing Stand.

7. Open discharge housing access door (Figure 9, Item 1) and remove end cap (Figure 9, Item 2).
8. Remove end caps (Figure 9, Item 3) from 66 in. dispensing hose (Figure 9, Item 4).
9. Attach and secure the 66 in. dispensing hose (Figure 9, Item 4) into dispensing port (Figure 9, Item 5).

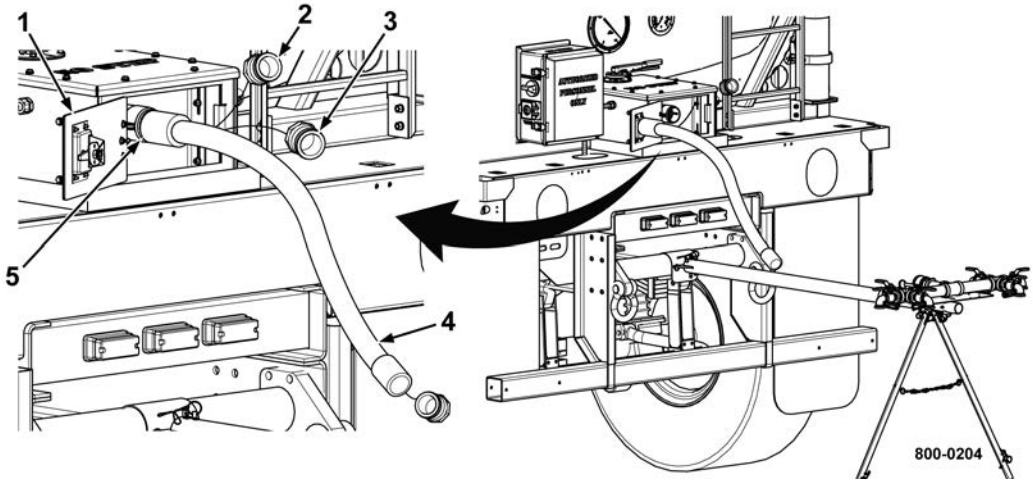


Figure 9. Attach 66 in. Dispensing Hose.

Dispensing Potable Water - Continued

10. Attach 46 in. dispensing hose (Figure 10, Item 1) to end of 66 in. dispensing hose (Figure 10, Item 2).
11. Attach and secure 46 in. dispensing hose (Figure 10, Item 1) to dispensing system (Figure 10, Item 3).

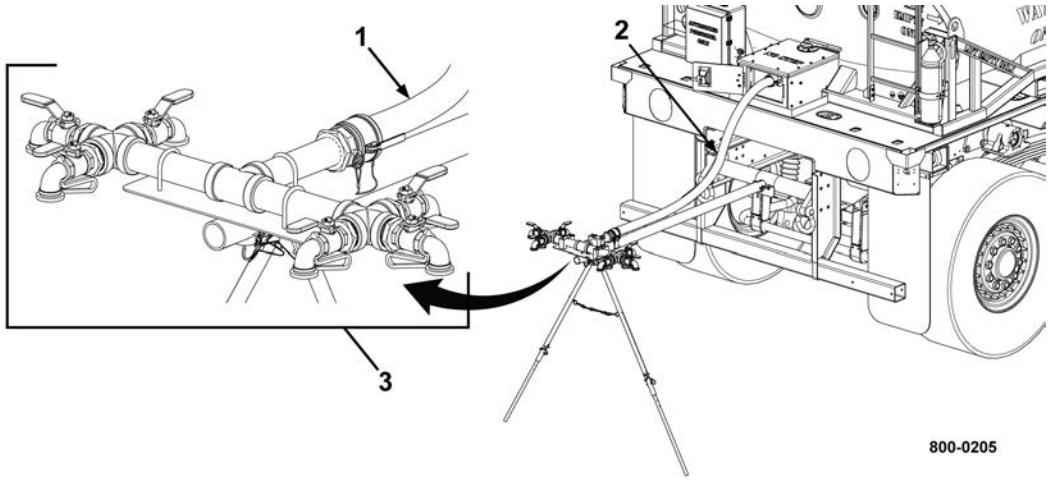


Figure 10. Attach 46 in. Dispensing Hose.

Dispensing Potable Water - Continued

NOTE

Ensure six point dispensing system valves are closed before turning on main dispensing valve.

12. Turn main dispensing valve (Figure 11, Item 1) to ON position allowing water to flow to six dispensing valves (Figure 11, Item 2).
13. Remove dust cover (Figure 11, Item 3) and turn dispensing valve (Figure 11, Item 2) to release water.

CAUTION

When installing 30 in. extension hose or barbed hose fitting into dispensing system ensure threads are not crossed. Failure to comply may result in damage to equipment.

NOTE

If using the optional 30 in. extension hose or barbed hose fitting (BII) complete step 14. Both install the same way.

14. Screw 30 in. extension hose (Figure 11, Item 4) or barbed hose fitting (Figure 11, Item 5) into the dispensing elbow (Figure 11, Item 6) with a clockwise motion. Tighten firmly with adjustable wrench to prevent leaking around threads.

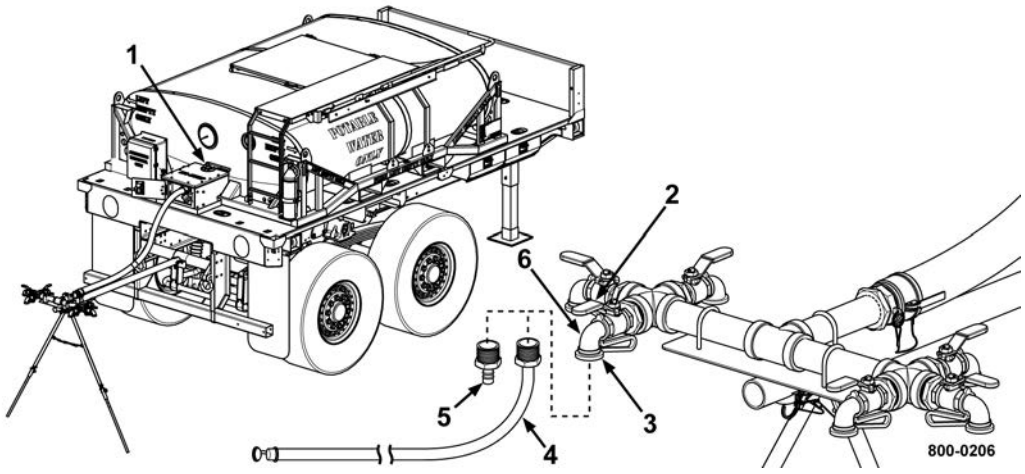


Figure 11. Dispensing Potable Water.

END OF TASK

Draining Water Tank

NOTE

- Drain into a sanitary sewer or other approved location (not into a lake, stream, or storm drain). Local requirements may require de-chlorination prior to discharging.
- When stowing dispensing system and dispensing hose ensure all water is drained prior to placing in stowage.

1. Open discharge box door (Figure 12, Item 1) and remove end cap (Figure 12, Item 2).
2. Attach and secure dispensing hose (Figure 12, Item 3) into dispensing port (Figure 12, Item 4) and turn main dispensing valve (Figure 12, Item 5) to ON position, draining water from the tank.
3. When unit is drained, close main dispensing valve (Figure 12, Item 5) and remove dispensing hose (Figure 12, Item 3).
4. Ensure dispensing hose (Figure 12, Item 3) is drained, then replace end caps (Figure 12, Item 6). Place dispensing hose in stowage box (Figure 12, Item 7).
5. Place end cap (Figure 12, Item 2) onto dispensing port (Figure 12, Item 4) and secure discharge box door (Figure 12, Item 1).

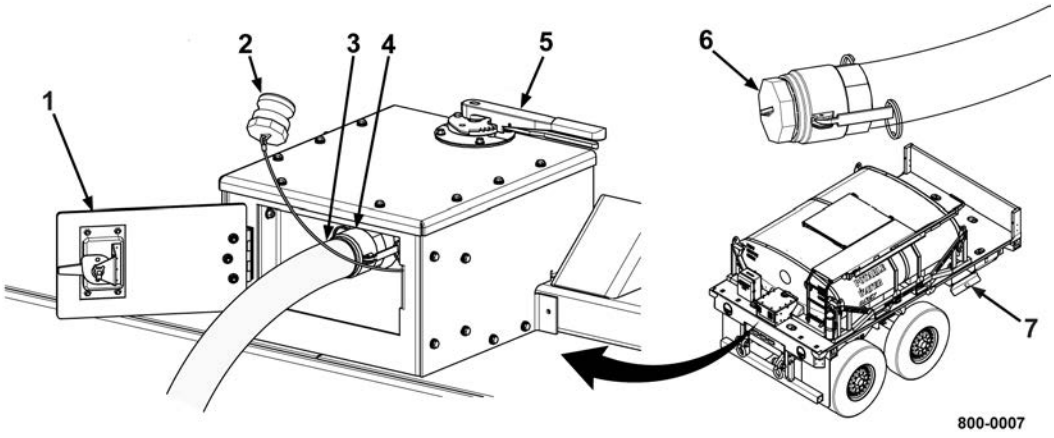


Figure 12. Draining Water Tank.

END OF TASK

Stowing Retail Dispensing System

NOTE

All retail dispensing components must be completely drained prior to being placed in storage.

1. Close main dispensing valve (Figure 13, Item 1) and drain water from six point dispensing system (Figure 13, Item 2).

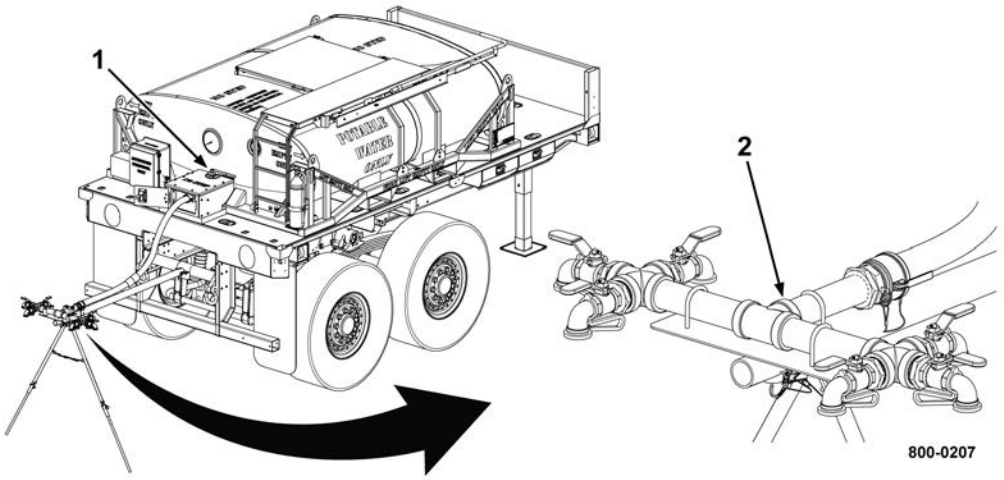


Figure 13. Drain Six Point Dispensing System.

2. Disconnect dispensing hoses (Figure 14, Item 1), drain each hose and secure end caps (Figure 14, Item 2).

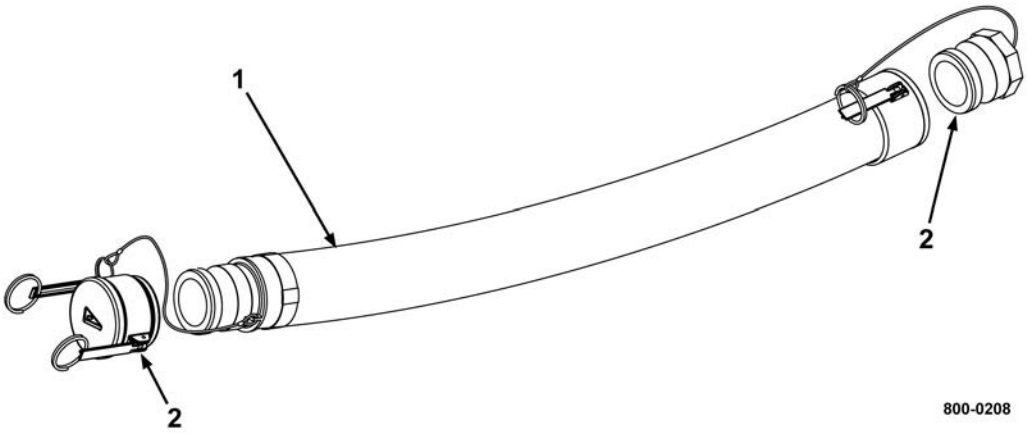


Figure 14. Dispensing Hose Disconnection.

Stowing Retail Dispensing System - Continued

3. Secure end cap (Figure 15, Item 1) onto dispensing port (Figure 15, Item 2).

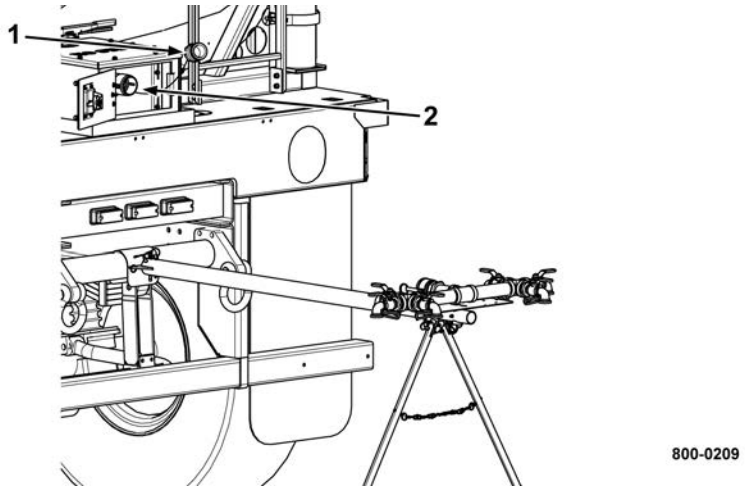


Figure 15. Secure End Cap.

4. Open each dispensing valve (Figure 16, Item 1) and fully drain six point dispensing assembly (Figure 16, Item 2).
5. Close each dispensing valve (Figure 16, Item 1) and replace each dust cover (Figure 16, Item 3).

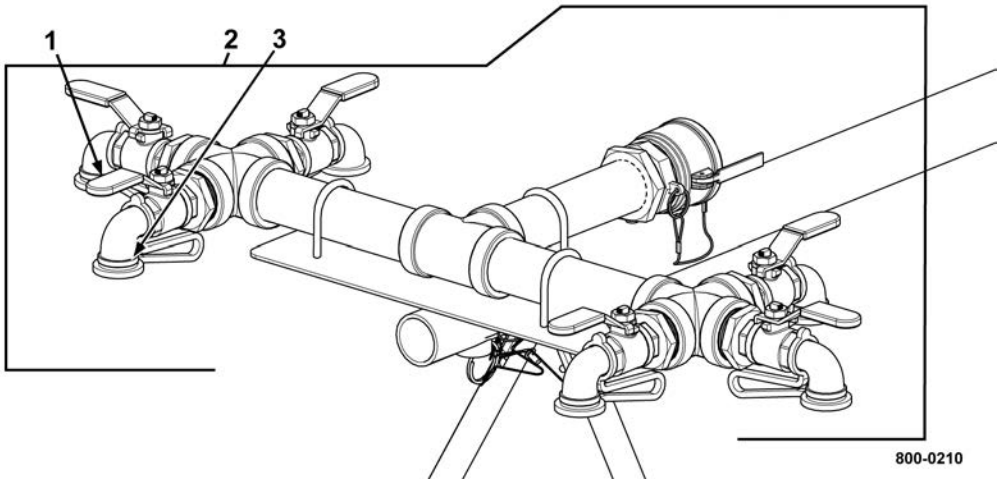


Figure 16. Drain Six Point Dispensing Assembly.

Stowing Retail Dispensing System - Continued

6. Remove retaining pin (Figure 17, Item 1). Disconnect six point dispensing system (Figure 17, Item 2) from the dispensing stand (Figure 17, Item 4). Ensure no water in six point dispensing system prior to securing end cap (Figure 17, Item 3). Insert retaining pin.

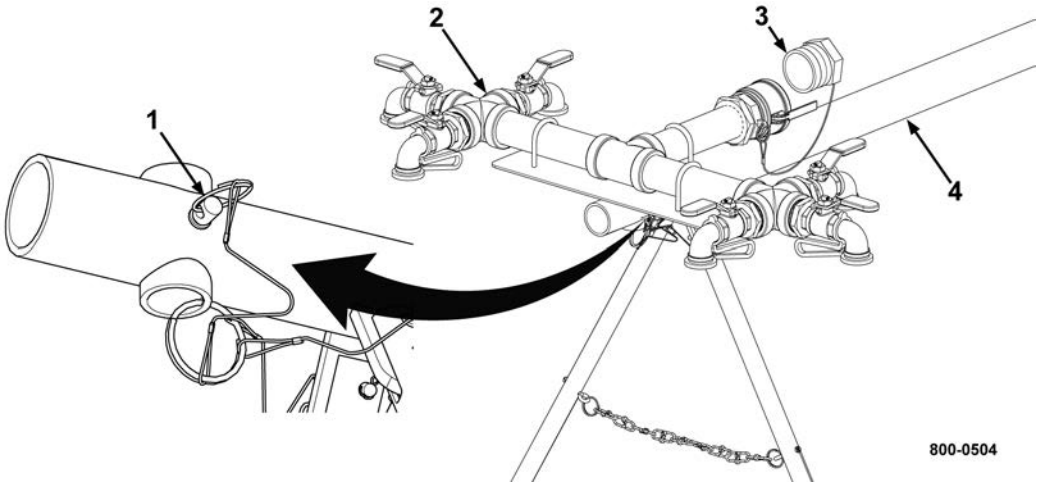


Figure 17. Detach Dispensing System from Dispensing Stand.

7. Remove retaining pin (Figure 18, Item 1) and retract dispensing stand (Figure 18, Item 2). Insert retaining pin.

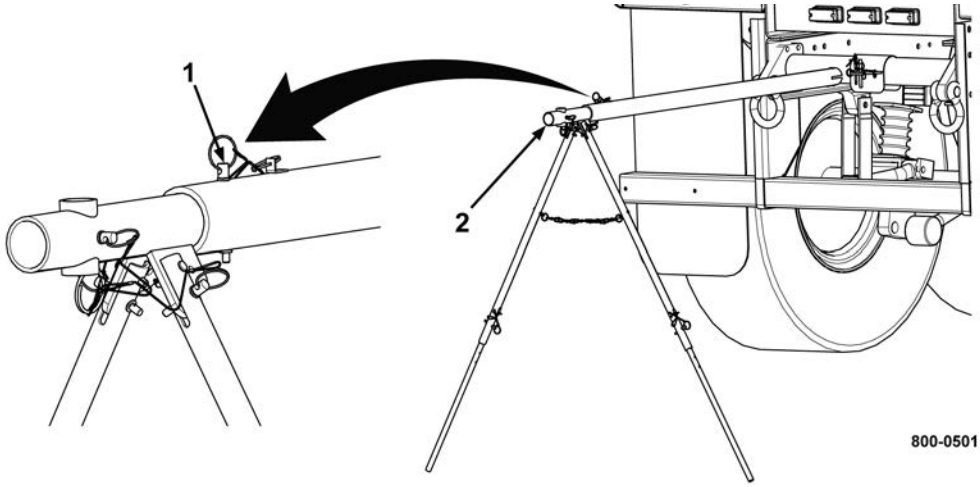


Figure 18. Retract Dispensing Stand.

Stowing Retail Dispensing System - Continued

8. Remove retaining pins (Figure 19, Item 1) and disconnect dispensing stand (Figure 19, Item 3) from trailer mount bracket (Figure 19, Item 2). Insert retaining pins and remove trailer mount bracket.

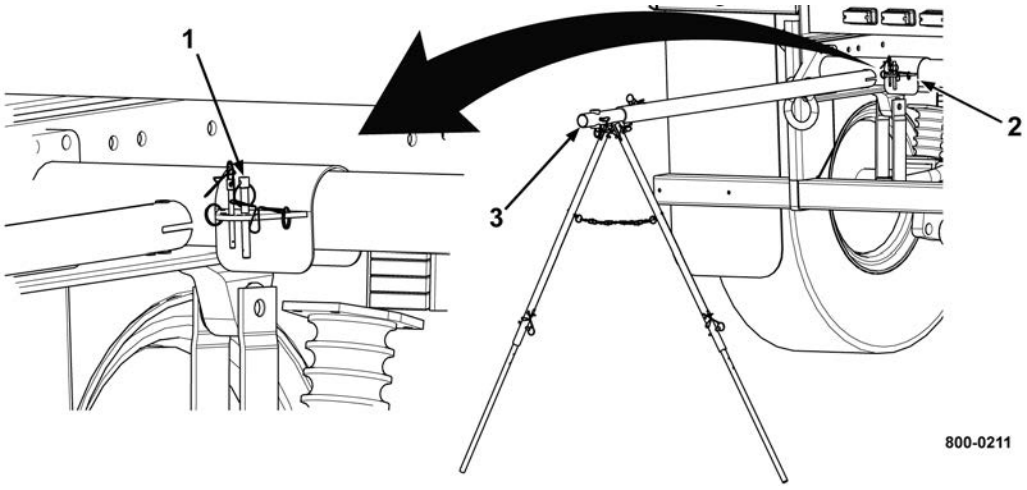


Figure 19. Dispensing Stand Disconnection.

9. Remove retaining pins (Figure 20, Item 1) and fold dispensing stand legs (Figure 20, Item 2) to closed position. Insert retaining pins.

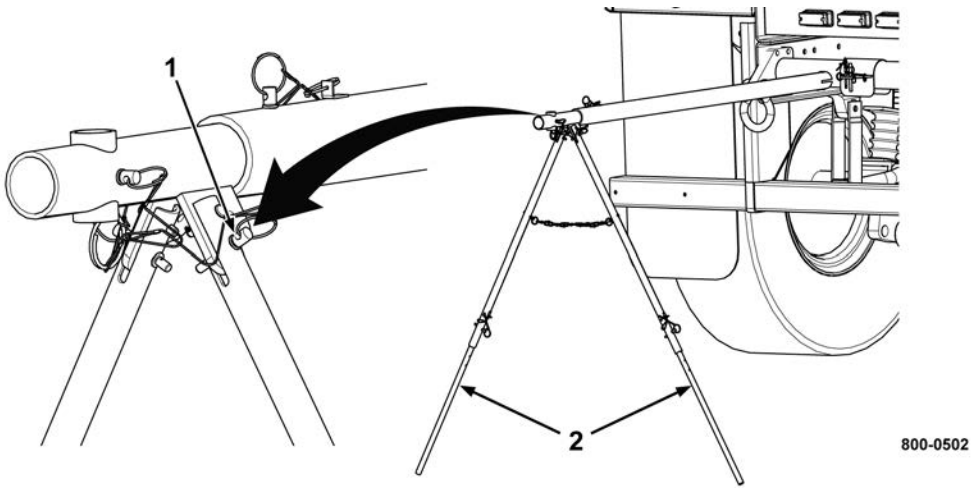


Figure 20. Close Dispensing Stand Legs.

10. Stow individual dispensing components into BII stowage IAW (WP 0013).

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER USUAL CONDITIONS - TRAILER LADDER OPERATION

INITIAL SETUP:

Personnel Required
Two

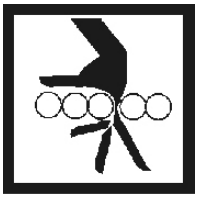
Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

GENERAL

This work package provides the procedures to be used when deploying and stowing the trailer ladder.

OPERATING TRAILER LADDER

WARNING



There is a pinch hazard when deploying or stowing the trailer ladder. Use caution and wear protective gloves. Failure to comply may result in injury to personnel.

DEPLOYING TRAILER LADDER

1. Remove trailer ladder locking pin (Figure 1, Item 1) from trailer ladder stowage compartment rail (Figure 1, Item 2).
2. Remove trailer ladder (Figure 1, Item 3) from trailer ladder stowage compartment.

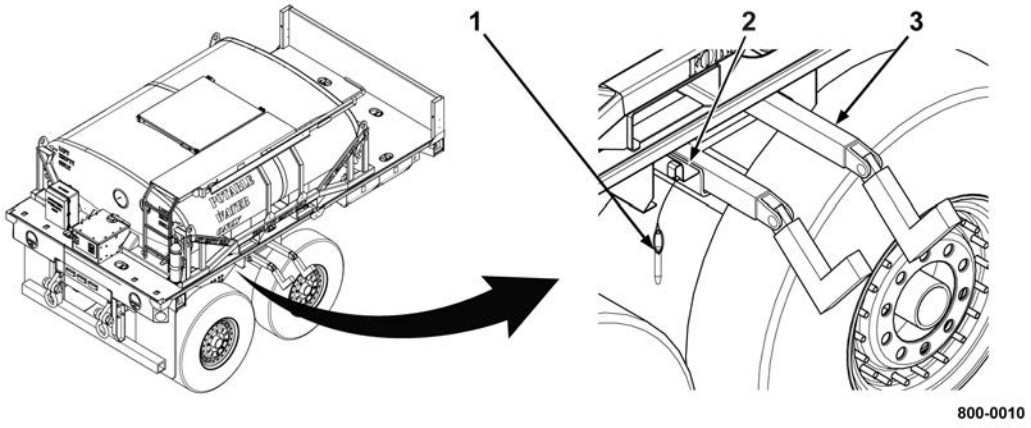


Figure 1. Trailer Ladder Removal.

OPERATING TRAILER LADDER - Continued

3. Remove two retaining pins (Figure 2, Item 2) from the curbside trailer ladder mount pockets (Figure 2, Item 3) and lower internal pocket stakes (Figure 2, Item 4).
4. Place trailer ladder (Figure 2, Item 1) into trailer ladder mounting pockets (Figure 2, Item 3).

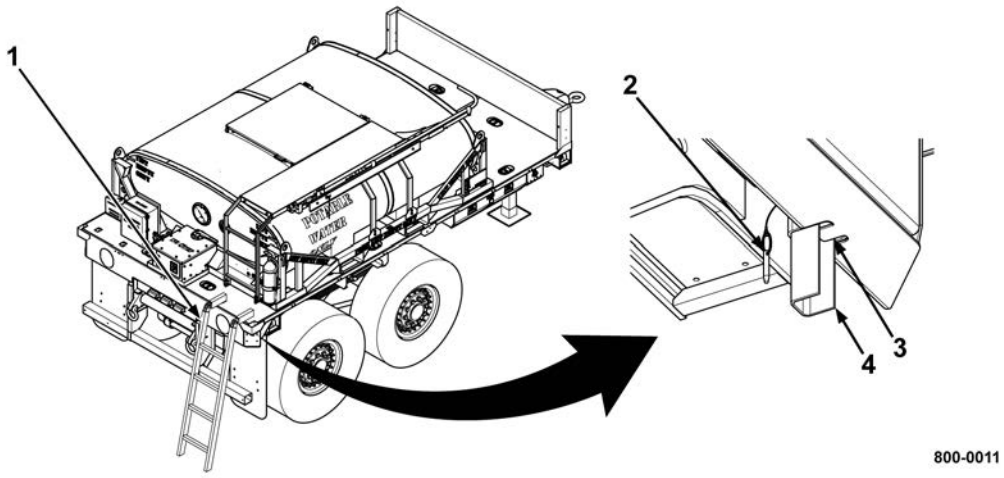


Figure 2. Trailer Ladder Mounting.

STOWING TRAILER LADDER

1. Remove trailer ladder (Figure 3, Item 1) from trailer ladder mounting pockets (Figure 3, Item 2).
2. Slide internal pocket stakes (Figure 3, Item 3) up and replace retaining pins (Figure 3, Item 4).

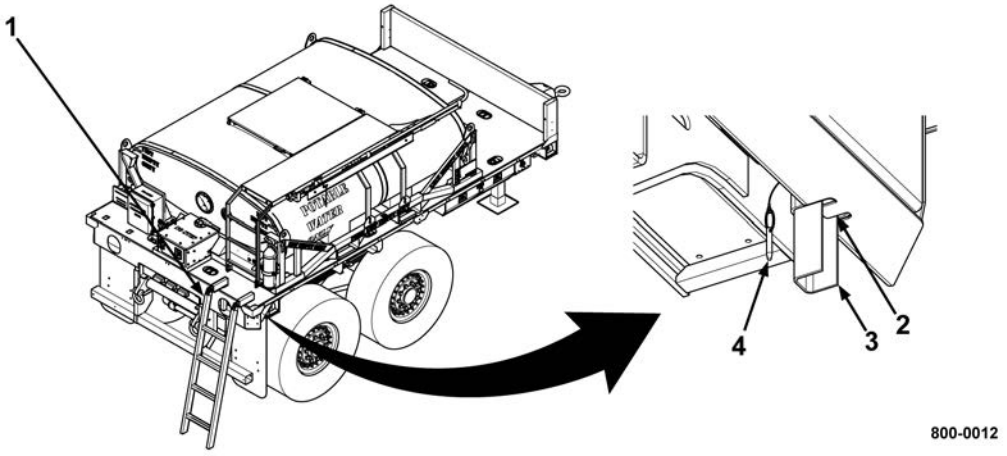


Figure 3. Detach Trailer Ladder.

OPERATING TRAILER LADDER - Continued

3. Slide trailer ladder (Figure 4, Item 1) into trailer ladder stowage compartment (Figure 4, Item 2) with L-mounting brackets (Figure 4, Item 3) facing up.
4. Replace trailer ladder locking pin (Figure 4, Item 4).

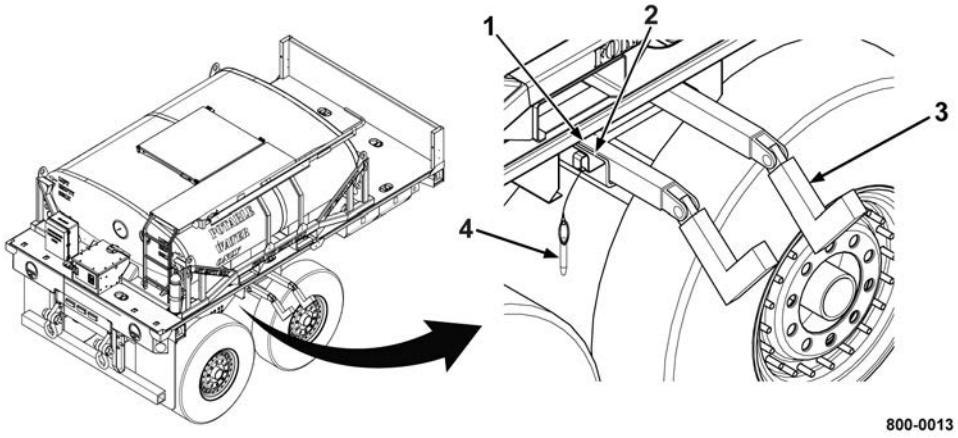


Figure 4. Trailer Ladder Stowage.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER USUAL CONDITIONS - HANDRAIL OPERATION

INITIAL SETUP:

Personnel Required
Two

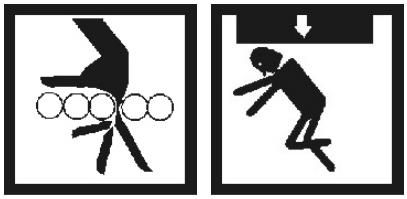
Equipment Condition
Trailer Ladder Deployed (WP 0006)

GENERAL

This work package provides the procedures to be used when deploying and stowing the handrail.

OPERATING HANDRAIL

WARNING



- Three points of contact.
- The Handrail is non-load bearing. Do not lean against the Handrail.
- Use caution when kneeling on catwalk platform. Do not hit your head on top rail.
- There is a pinch hazard when deploying or stowing the handrail. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

DEPLOYING HANDRAIL

Remove handrail retaining pin (Figure 1, Item 1) and rotate handrail (Figure 1, Item 2) to up position.

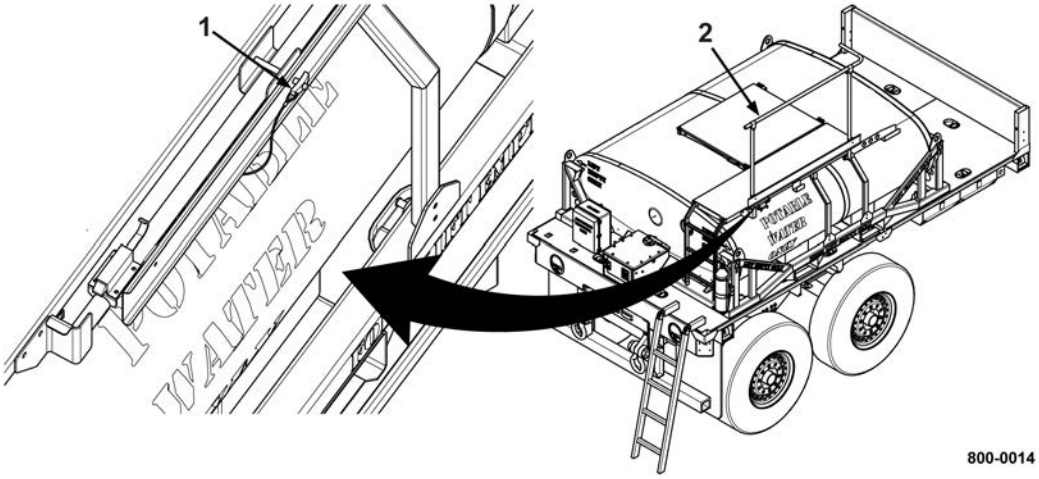
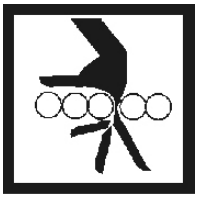


Figure 1. Deploy Handrail.

OPERATING HANDRAIL - Continued

STOWING HANDRAIL

WARNING



There is a pinch hazard when deploying or stowing the handrail. Use caution and wear protective gloves. Failure to comply may result in injury to personnel.

1. Pull spring loaded locking latch (Figure 2, Item 3) and rotate handrail (Figure 2, Item 2) into down position.
2. Install handrail retaining pin (Figure 2, Item 1) securing handrail (Figure 2, Item 2).

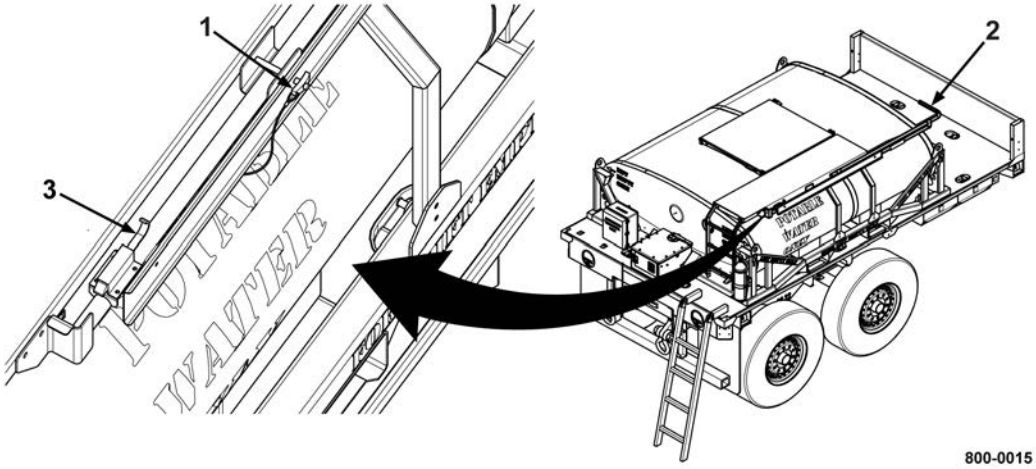


Figure 2. Stowing Handrail.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER USUAL CONDITIONS - TOWING THE CAMEL II

INITIAL SETUP:

Personnel Required
Two

References
Towing Vehicle Operator Manual

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Coupling Trailer to Towing Vehicle (TM 9-2330-394-13&P)
Uncoupling Trailer from Towing Vehicle (TM 9-2330-394-13&P)
Landing Gear Operation (TM 9-2330-394-13&P)

NOTE

For coupling and uncoupling operations, refer to M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), TM 9-2330-394-13&P.

GENERAL

This work package provides the data and procedures to be used when towing Camel II.

PREPARATION FOR MOVEMENT

1. Secure all Basic Issue Items (BII) in the stowage box.
2. Stow handrail (WP 0007), trailer ladder (WP 0006) and secure all covers, lids, and doors.

END OF TASK

TOWING TRAILER

WARNING

- Sloshing and surging payloads are caused by speed, turning radius, sudden maneuvers, braking, or acceleration, causing liquid load shifts which can contribute to rollover.
- Driving too fast for conditions can result in loss of control and cause death or serious injury. Adjust speed down when towing trailer.
- Loss of control of the trailer or trailer/tow vehicle combination can result in death or serious injury. Do not exceed maximum trailer speed and grade limitations (WP 0002). Do not exceed maximum side slope or departure angles or ford water greater than maximum depth. Adjust speed down if necessary to maintain a safe driving condition.
- Failure to comply may result in injury to personnel or damage to equipment.

CAUTION

- Exercise caution when transporting full or partial liquid payloads while negotiating turns. Liquid load shifts will affect turning maneuverability.
- When turning corners, trailer wheels turn inside turning radius of towing vehicle. Allow adequate turning room.
- Full or partial liquid payloads will affect stopping and off-road maneuverability: sloshing and surging payloads require greater stopping distance and lessen the off-road maneuverability. Allow adequate stopping distance, and drive cautiously in off-road conditions.
- Manage speed to adapt to driving and road conditions. Slow down if the trailer begins to sway.
- Failure to comply may result in damage to equipment.

NOTE

When backing, trailer moves in opposite direction of front wheels on towing vehicle. When front wheels on towing vehicle are turned right, rear of trailer will go left. When front wheels on towing vehicle are turned left, rear of trailer will go right. When trailer has turned and backing in a straight line is required, turn towing vehicle wheels in direction that trailer is moving. This will bring towing vehicle and trailer back in line with each other.

1. Use two ground guides when backing towing vehicle. Station one ground guide to right or left rear of trailer and other ground guide to left or right front of towing vehicle. Front ground guide must be visible to operator at all times to provide backing instructions.

TOWING TRAILER - Continued

2. Back up slowly and pay close attention to ground guide's signals.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS - WEATHER AND ENVIRONMENT

INITIAL SETUP:

Personnel Required
Two

References
TC 21-305-20

References (cont.)
TM 9-2330-394-13&P
WP 0010
WP 0050

UNUSUAL WEATHER AND ENVIRONMENT

NOTE

Operation Under Unusual Conditions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Unusual Conditions for the trailer prior to performing any operation.

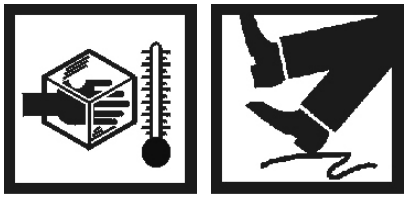
General

The Camel II is designed for use in a wide range of conditions. The paragraphs in this work package provide the data and procedures to be used by the Operator when operating the Camel II in unusual conditions.

UNUSUAL WEATHER AND ENVIRONMENT - Continued

Operation in Cold Weather 32°F to -25°F (0°C to -32°C)

WARNING



- Do not touch extremely cold metal. Bare skin may freeze to cold metal.
- Wear gloves when operating or handling metallic equipment that is wet or ice covered.
- Exercise caution when working on the catwalk and ladders where snow or ice exists.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

- Before operating ensure the Camel II has been prepared for cold weather environment in accordance with TC 21-305-20.
- Exercise care when removing accumulation of snow, mud, and ice from Camel II.
- Failure to comply may result in damage to equipment.

1. Refer to PMCS (WP 0050) for proper lubrication during cold weather conditions.
2. Refer to (WP 0010) for operation of temperature protection controls.

Operation in Extreme Heat

Refer to (WP 0050) for proper lubrication during extreme heat conditions. Adequate lubrication is essential.

Operation in High Humidity and Saltwater Areas

Frequently inspect, clean, and lubricate inactive equipment to prevent the accumulation of corrosion and fungus. Notify Field Level Maintenance if corrosion is found.

Operation in Mud and Snow

1. Immediately after operation in mud or snow, thoroughly clean, inspect, and lubricate.
2. Refer to (WP 0050) for proper lubrication instructions.

UNUSUAL WEATHER AND ENVIRONMENT - Continued

Operation in Dusty Or Sandy Areas

1. Inspect, clean, and lubricate frequently when operating in dusty or sandy areas. Refer to (WP 0050), for proper lubrication instructions.
2. Make sure no dust or sand enters exposed mechanisms or lubrication fittings during inspections and repair operations. Cover exposed parts with tarpaulins or other suitable cover during disassembly and assembly.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS - TEMPERATURE PROTECTION CONTROLS

INITIAL SETUP:

Tools and Special Tools
Power Cord (WP 0188, Table 2, Item 25)

Personnel Required
Two

References
TM 9-2330-394-13&P
Towing Vehicle Operator Manual, refer to trailer TM for coupling

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

TEMPERATURE PROTECTION CONTROLS

NOTE

- Operation Under Unusual Conditions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Unusual Conditions for the trailer prior to performing any operation.
- Heat blanket and heat trace freeze protection should only be used when water temperature indicator reaches 45°F (7.22°C) or lower temperatures.

General

The Camel II is designed for use in a wide range of conditions. The paragraphs in this work package provide the data and procedures to be used by the Operator when operating the Camel II in cold weather environment.

TEMPERATURE PROTECTION CONTROLS - Continued

Connected to 240 VAC Single Phase

1. With the power cord (Figure 1, Item 1), connect Camel II external power plug (Figure 1, Item 2) to an external 240 VAC single phase power source.
2. At control panel (Figure 1, Item 3) turn main power switch (Figure 1, Item 4) to ON position. Power on will be indicated by an illuminated green indicator light (Figure 1, Item 5).

NOTE

The indicator light will only illuminate when power is being supplied to the component indicated by the light.

3. Place heat trace toggle switch (Figure 1, Item 6) to down ON position. Power ON will be indicated by an illuminated amber indicator light (Figure 1, Item 7).
4. Place heat blanket toggle switch (Figure 1, Item 8) to the ON position. Power ON will be indicated by an illuminated amber indicator light (Figure 1, Item 9) when temperature controller reaches preset temperature and power is sent to heat blankets.

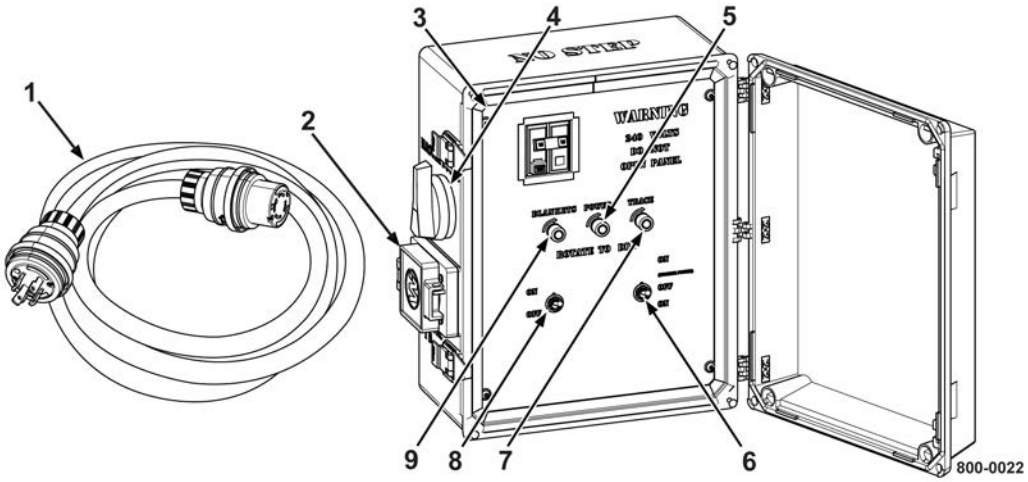


Figure 1. 240 VAC Power Temperature Protection Controls.

TEMPERATURE PROTECTION CONTROLS - Continued

Disconnect 240 VAC Single Phase

1. Turn heat trace toggle switch (Figure 2, Item 3) and heat blanket toggle switch (Figure 2, Item 4) to OFF position.
2. Turn main power switch (Figure 2, Item 1) OFF.
3. Disconnect and stow power cord (Figure 2, Item 2).

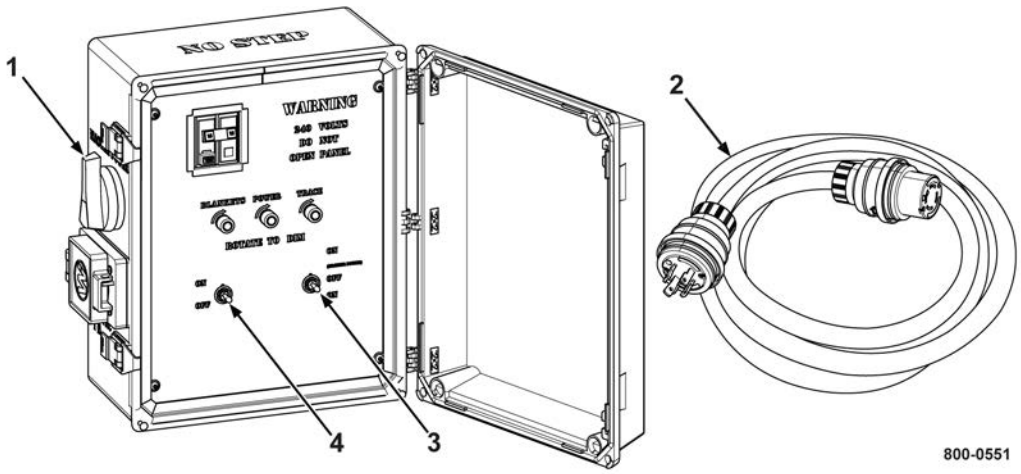


Figure 2. Disconnect 240 VAC Single Phase.

Heat Trace 12 VDC Temperature Protection Controls

NOTE

- While being towed by prime mover running lights must be ON for heat trace to work in this configuration.
- The indicator light will only illuminate when power is being supplied to the component indicated by the light.

1. Couple trailer to prime mover, TM 9-2330-394-13&P.
2. Turn running lights of prime mover ON. (Refer to prime mover TM).

TEMPERATURE PROTECTION CONTROLS - Continued

3. Place heat trace toggle switch (Figure 3, Item 1) to the UP trailer power position (Figure 3, Item 2).

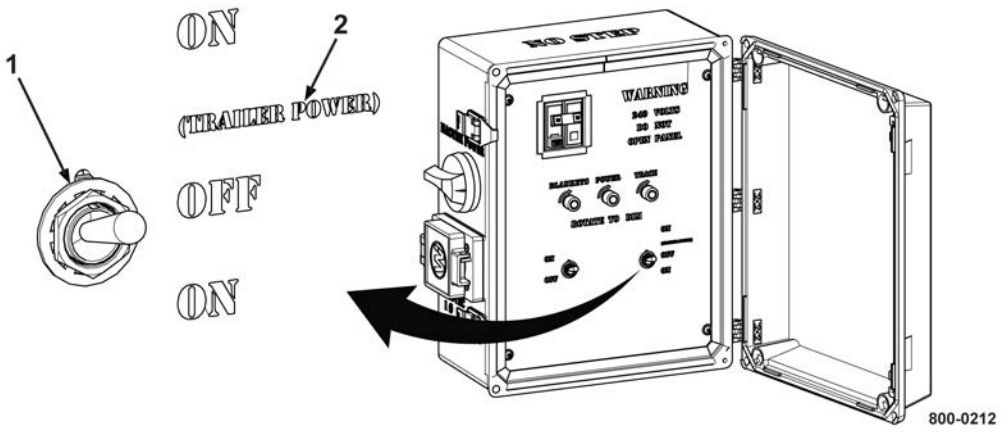


Figure 3. Heat Trace 12 VDC Temperature Protection Controls.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS - DISPENSING POTABLE WATER

INITIAL SETUP:

Tools and Special Tools
Adjustable, Wrench, 10 in. (WP 0188, Table 2, Item 1)

References
TM 9-2330-394-13&P
WP 0013

Personnel Required
Two

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

DISPENSING POTABLE WATER

NOTE

Operation Under Unusual Conditions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Unusual Conditions for the trailer prior to performing any operation.

General

The Camel II is designed for use in a wide range of conditions. The paragraphs in this work package provide the data and procedures to be used by the Operator when operating the Camel II in unusual conditions.

DISPENSING POTABLE WATER - Continued

CAUTION

- Do not force Main Dispensing Valve to the open position. Valve may become frozen or hard to move in cold weather environment. Allow heat trace to thaw valve before operating. Failure to comply may cause damage to equipment.
- When installing 30 in. extension hose into dispensing system ensure threads are not crossed.
- Failure to comply may result in damage to equipment.

NOTE

- In cold weather environment, when not dispensing, close main dispensing valve and drain single point dispensing system to prevent freezing.
- When stowing dispensing system and dispensing hose ensure all water is drained prior to placing in stowage.
- If there is significant drop in flow rate during dispensing operations, loosen six manhole cover latching bolts to relieve pressure inside tank.

1. Open discharge box door (Figure 1, Item 1) and remove end cap (Figure 1, Item 2).
2. Attach and secure single point dispensing system (Figure 1, Item 3) into dispensing port (Figure 1, Item 4).
3. Remove dust cover (Figure 1, Item 10).
4. Remove dust cover (Figure 1, Item 6).
5. Attach 30 in. extension hose (Figure 1, Item 9) to single point dispensing system (Figure 1, Item 3), tighten firmly to prevent leaking around threads.
6. Turn main dispensing valve (Figure 1, Item 7) to ON position allowing water to flow to single point dispensing system (Figure 1, Item 3).
7. Remove dust cover (Figure 1, Item 8) and turn single point dispensing valve (Figure 1, Item 5) to release water.

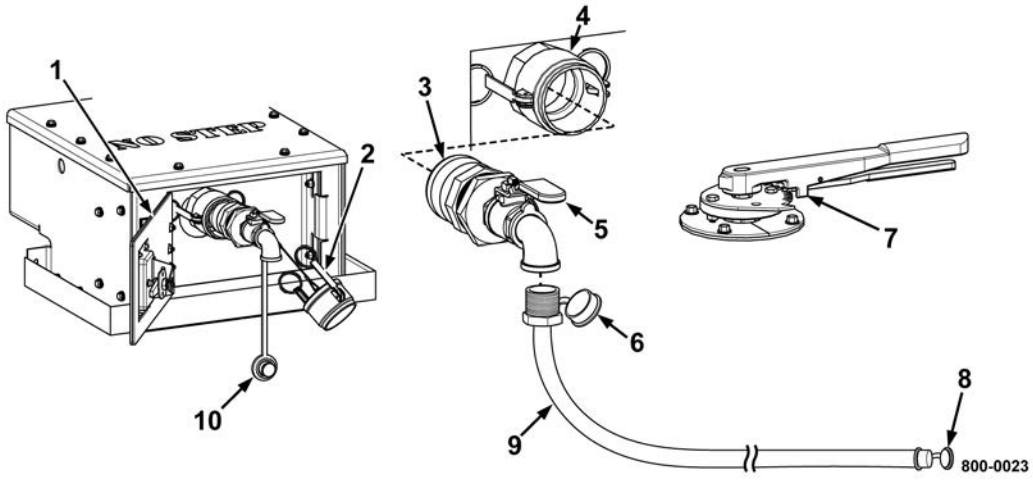


Figure 1. Dispensing Potable Water.

DISPENSING POTABLE WATER - Continued

END OF TASK

Stowing Single Point Dispensing System

NOTE

All retail dispensing components must be completely drained prior to being placed in storage.

1. Close main dispensing valve (Figure 2, Item 1) and drain water from single point dispensing system (Figure 2, Item 2) and 30 in. hose extension (Figure 2, Item 4).
2. Disconnect 30 in. hose extension (Figure 2, Item 4) from single point dispensing system (Figure 2, Item 2).
3. Secure dust cover (Figure 2, Item 3) onto 30 in. hose extension (Figure 2, Item 4) and secure dust cover (Figure 2, Item 5) onto single point dispensing system (Figure 2, Item 2).
4. Disconnect single point dispensing (Figure 2, Item 2) from dispensing port (Figure 2, Item 6).
5. Secure end cap (Figure 2, Item 7) onto dispensing port (Figure 2, Item 6).

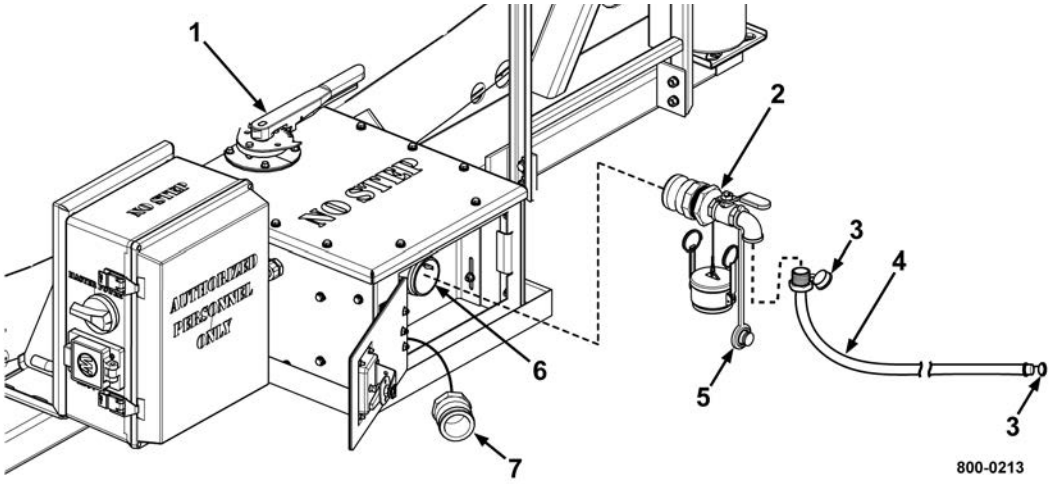


Figure 2. Single Point Dispensing System Disconnection.

Stowing Single Point Dispensing System - Continued

6. Fully drain single point dispensing system (Figure 3, Item 2).
7. Close single point dispensing valve (Figure 3, Item 1) and secure end cap (Figure 3, Item 3). Replace dust cover (Figure 3, Item 4).
8. Place single point dispensing system (Figure 3, Item 2) and 30 in. hose extension (Figure 3, Item 5) components into BII stowage (WP 0013).

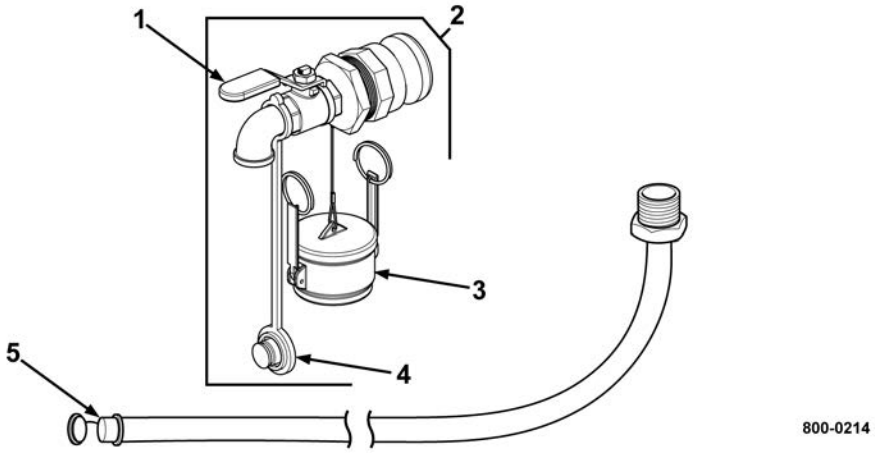


Figure 3. Stowing Single Point Dispensing System.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS - FORDING

INITIAL SETUP:

Personnel Required
Two

References
TM 9-2330-394-13&P

FORDING

NOTE

Operation Under Unusual Conditions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Unusual Conditions for the trailer prior to performing any operation.

General

The Camel II is designed for use in a wide range of conditions. The paragraph in this work package provides the data and procedures to be used by the Operator when operating the Camel II in unusual conditions.

Fording Operation for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), is located within TM 9-2330-394-13&P. The operator must be familiar with Operations Under Unusual Conditions for trailer prior to performing any operation.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
STOWAGE AND DECAL/DATA PLATE GUIDE

INTRODUCTION

Scope

This work package shows the location for stowage of equipment and material required to be carried on the Camel II trailers. This work package also shows locations of decals, stencils, and data plates that are required to be in place on the trailer.

General

The equipment stowage locator is designed to help inventory items required for safe and efficient operation. The equipment locator is representative of BII stowage on the Camel II.

STOWAGE LOCATIONS

See figure below for stowage locations.

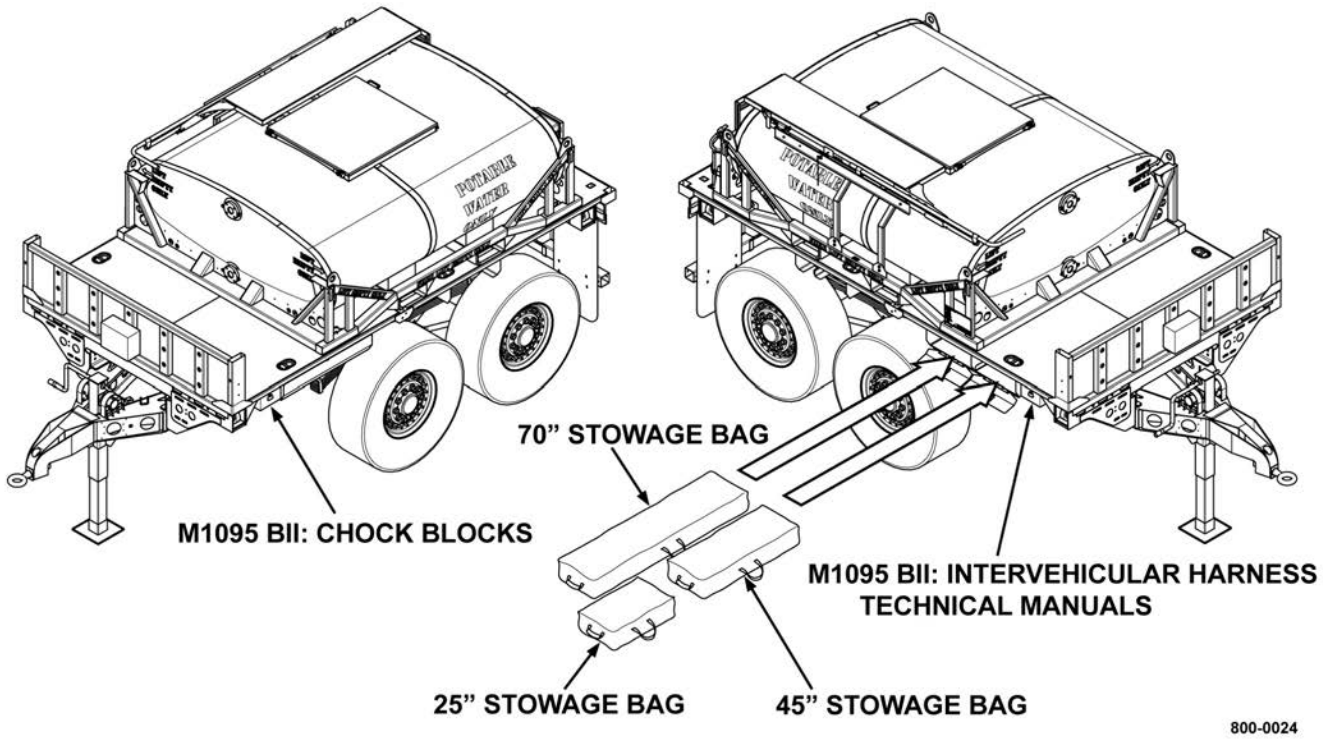


Figure 1. Stowage Locations.

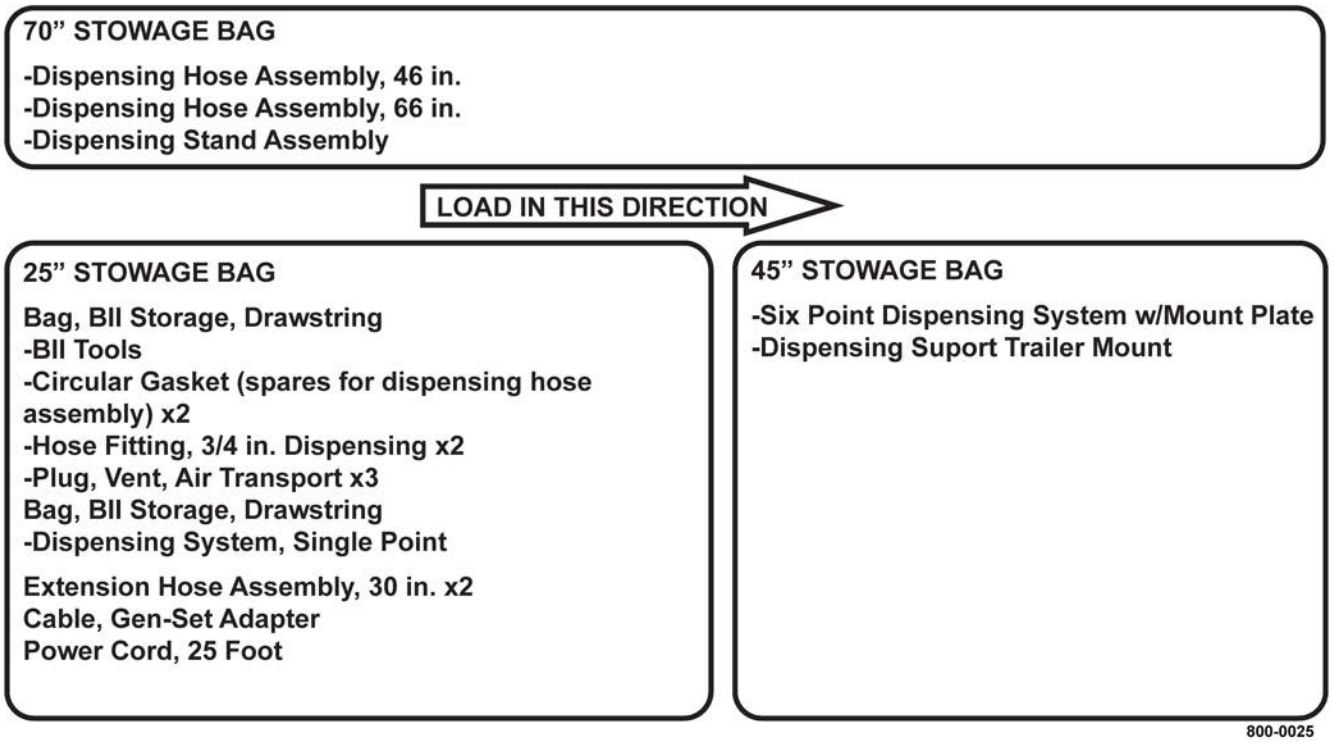

70" STOWAGE BAG
-Dispensing Hose Assembly, 46 in.
-Dispensing Hose Assembly, 66 in.
-Dispensing Stand Assembly
LOAD IN THIS DIRECTION
25" STOWAGE BAG
Bag, BII Storage, Drawstring
-BII Tools
-Circular Gasket (spares for dispensing hose assembly) x2
-Hose Fitting, 3/4 in. Dispensing x2
-Plug, Vent, Air Transport x3
Bag, BII Storage, Drawstring
-Dispensing System, Single Point
Extension Hose Assembly, 30 in. x2
Cable, Gen-Set Adapter
Power Cord, 25 Foot
45" STOWAGE BAG
-Six Point Dispensing System w/Mount Plate
-Dispensing Suport Trailer Mount
800-0025

Figure 2. Stowage Equipment.

DECALS/STENCILS/DATA PLATES

See figure below for decal/stencil/data plate locations.

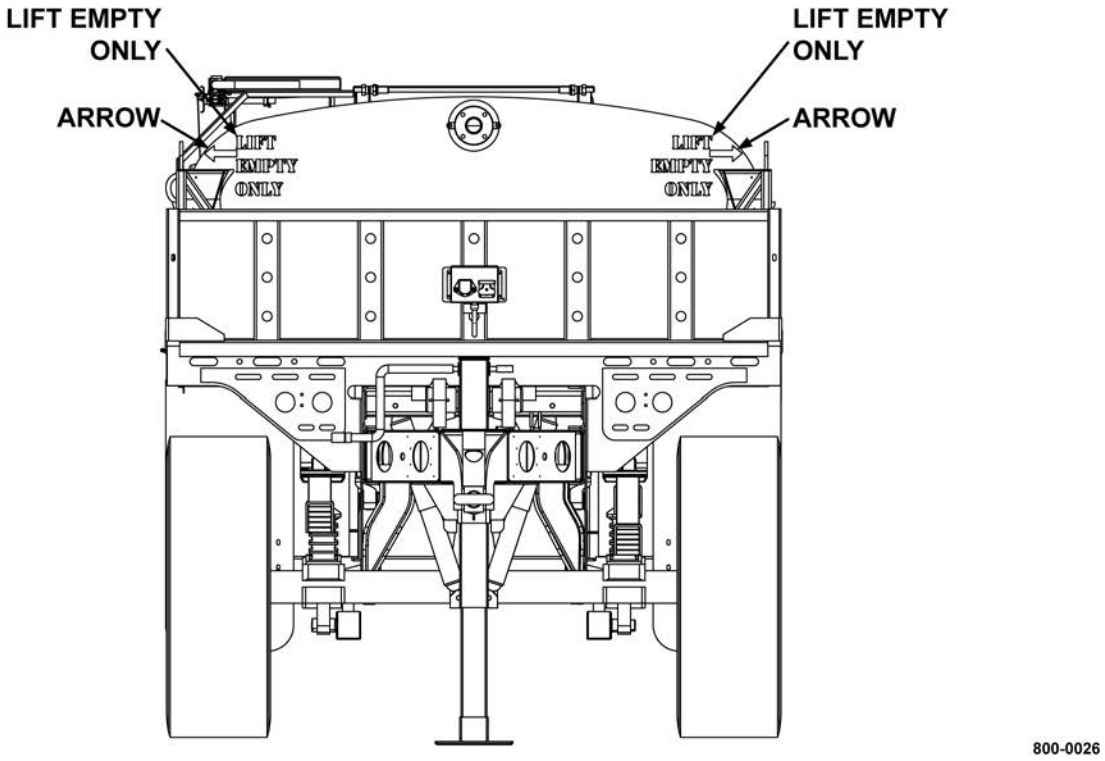


Figure 3. Front Decals/Stencils.

DECALS/STENCILS/DATA PLATES - Continued

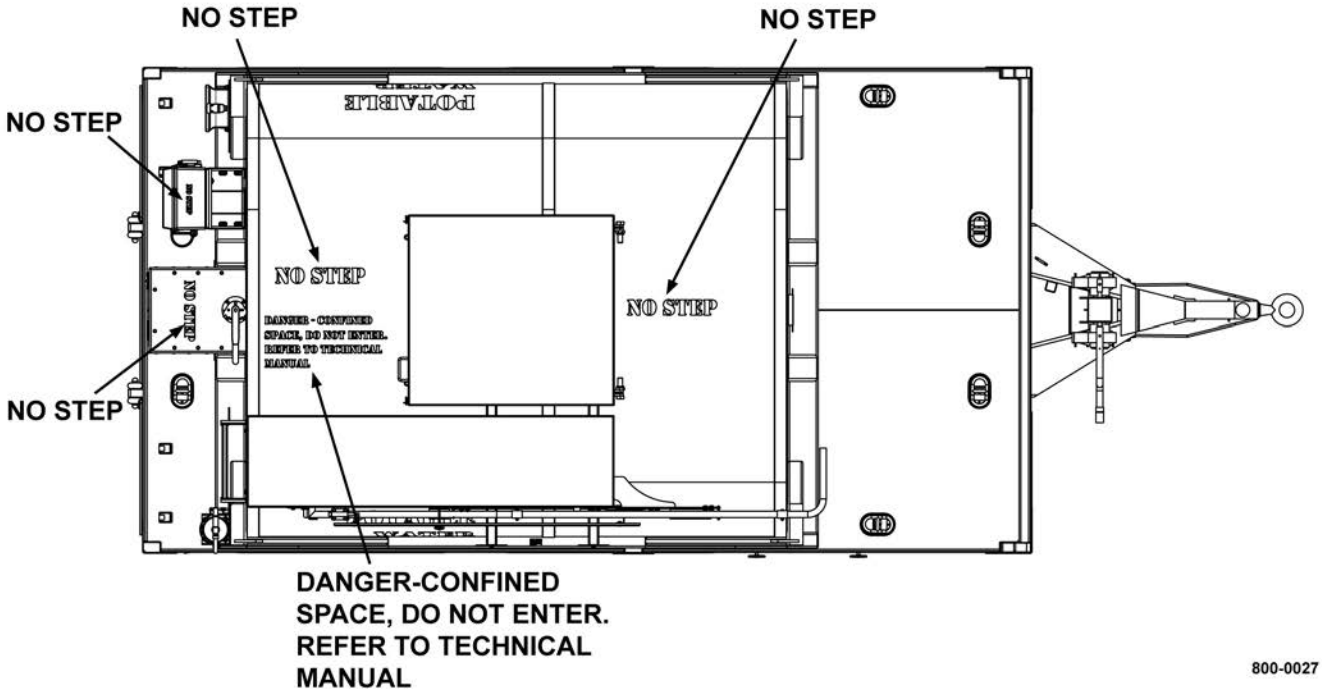


Figure 4. Top Decals/Stencils.

DECALS/STENCILS/DATA PLATES - Continued

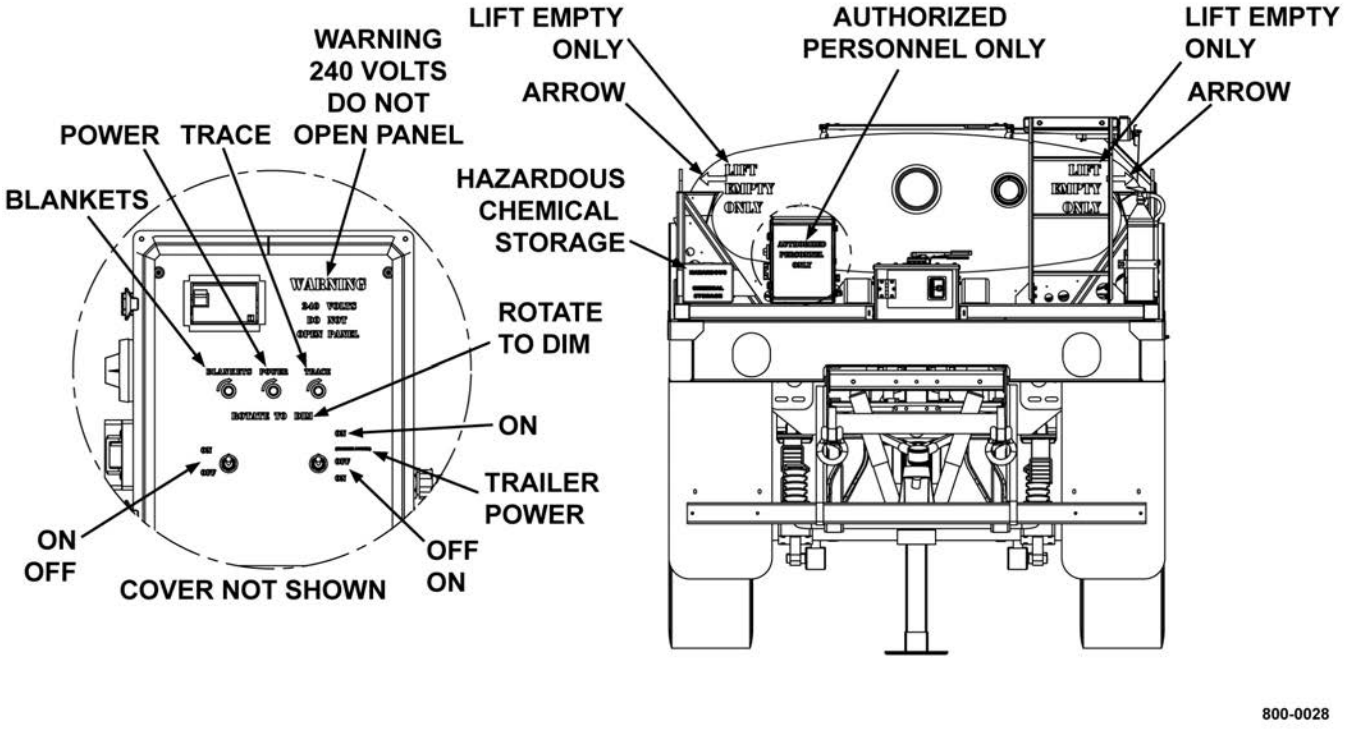


Figure 5. Back Decals/Stencils.

DECALS/STENCILS/DATA PLATES - Continued

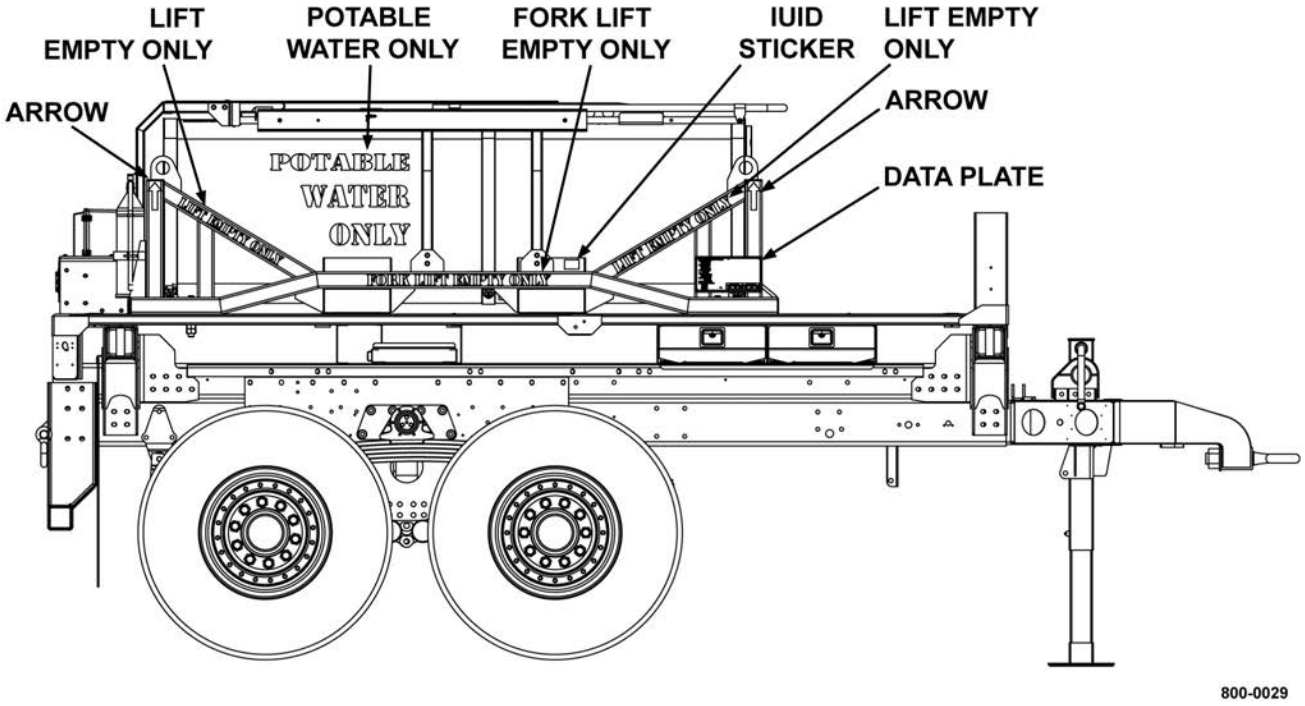


Figure 6. Curbside Decals/Stencils.

DECALS/STENCILS/DATA PLATES - Continued

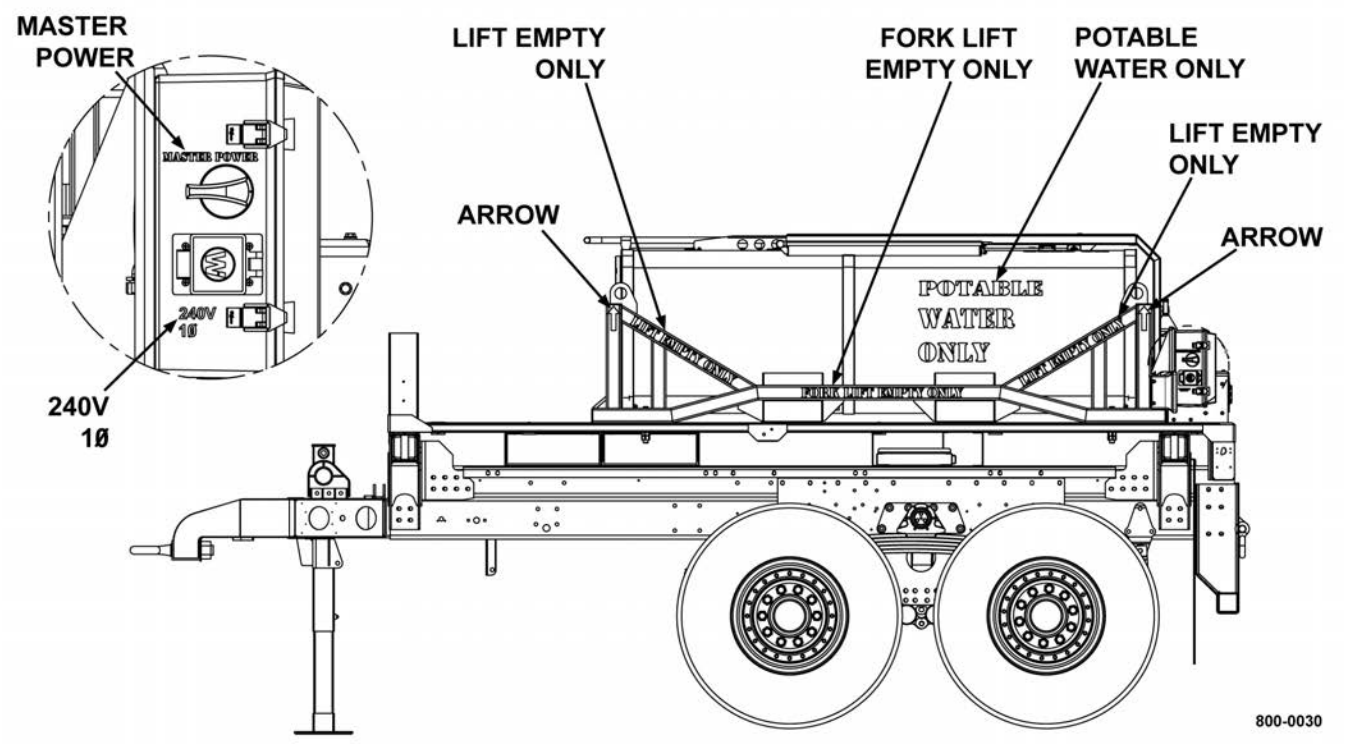


Figure 7. Roadside Decals/Stencils.

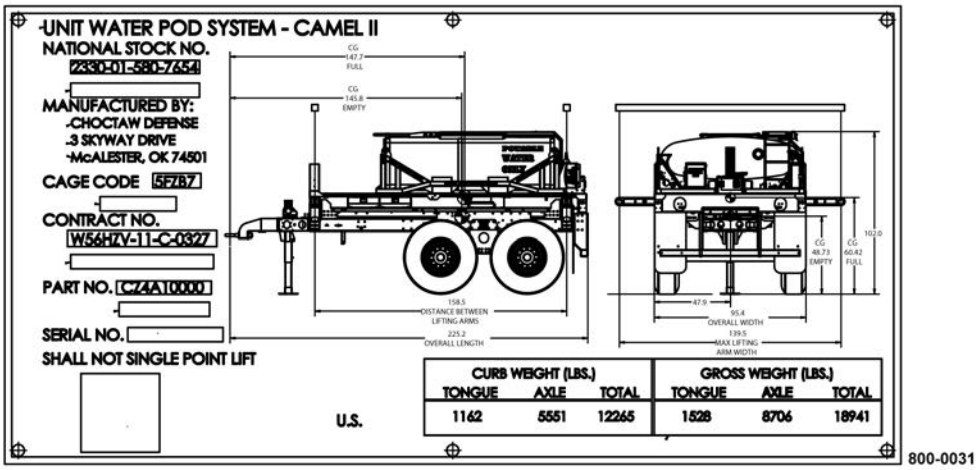


Figure 8. Data Plate.

DECALS/STENCILS/DATA PLATES - Continued

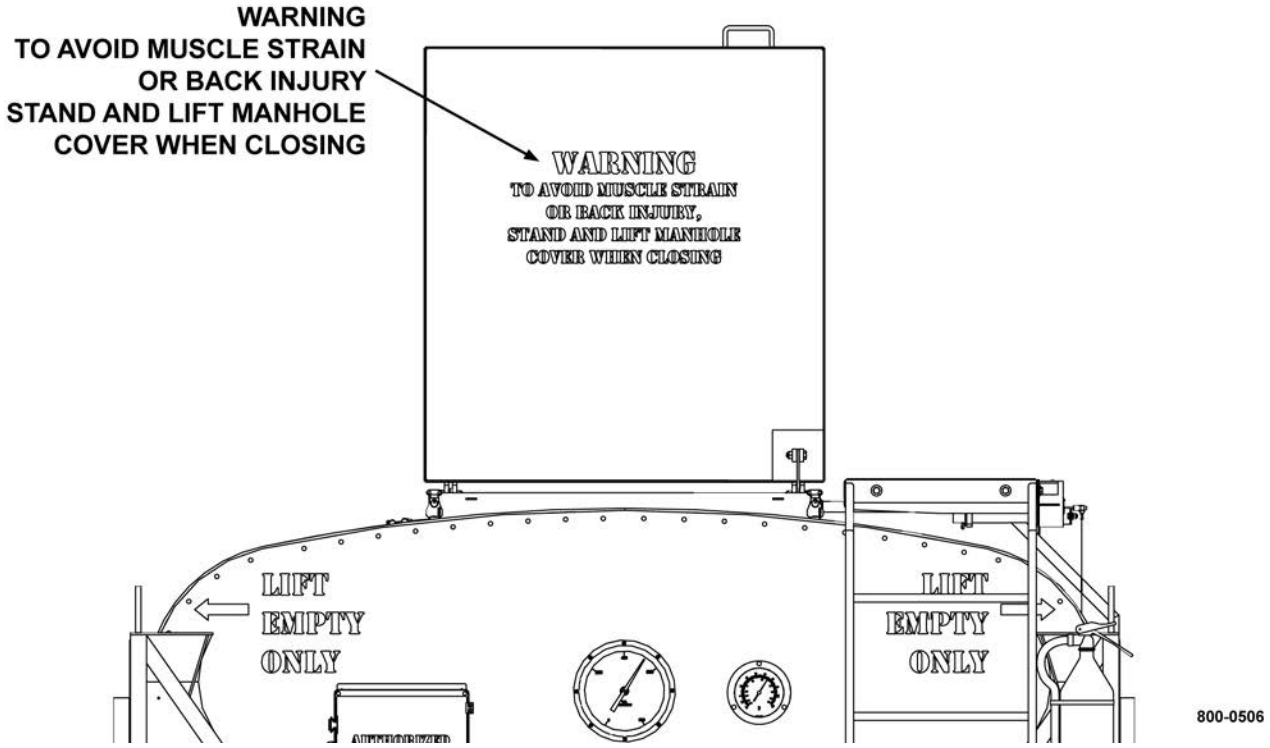


Figure 9. Spill Box Lid Stencil.

END OF WORK PACKAGE

CHAPTER 3

OPERATOR TROUBLESHOOTING PROCEDURES

OPERATOR MAINTENANCE
TROUBLESHOOTING INTRODUCTION

Introduction

NOTE

The Troubleshooting Procedures for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. Utilize these procedures for all troubleshooting procedures performed on the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT).

Troubleshooting Index

The Troubleshooting Index (WP 0015), is a quick reference index for finding troubleshooting procedures. Associated with each symptom name is a work package sequence number representing the starting point in a troubleshooting sequence. Should any one symptom require more than one troubleshooting sequence to arrive at the most likely area of investigation, the additional starting point numbers are presented. As the troubleshooting activity progresses through to the conclusion of a particular sequence, a reference is made to the next logical troubleshooting sequence by work package sequence number or by referring to the Troubleshooting Index to locate the next failure symptom work package. This type of activity continues until successful fault isolation is achieved.

Troubleshooting Procedures

The troubleshooting work packages contains the malfunctions, tests, or inspections and corrective action required to return the Camel II to normal operation. Perform the steps in the order they appear in the tables.

Each work package is headed by an initial setup. This setup outlines what is needed as well as certain conditions which must be met before starting the task. DO NOT START UP A TASK UNTIL:

You understand the task.
You understand what you are to do.
You understand what is needed to do the work.
You have the things you need.

This manual cannot list all malfunctions that may occur, or all tests, or inspections, and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify Field Level Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
TROUBLESHOOTING INDEX

TROUBLESHOOTING INDEX

Malfunction/Symptom	Troubleshooting Procedure
Electrical	
1. POWER INDICATOR LIGHT INOPERATIVE	WP 0016
2. HEAT BLANKET INDICATOR LIGHT INOPERATIVE	WP 0017
3. HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE	WP 0018
4. HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE	WP 0019
5. HEAT TRACE/HEAT BLANKET INOPERATIVE	WP 0020
Plumbing	
1. DISPENSING SYSTEM INOPERATIVE	WP 0021
2. DISPENSING SYSTEM VALVE INOPERATIVE	WP 0022
3. DISPENSING PIPE FITTINGS LEAKING	WP 0023
4. DISPENSING HOSE ASSEMBLY INOPERATIVE	WP 0024
5. FRONT FLANGE COVER LEAKING	WP 0025
6. WATER LEVEL INDICATOR INOPERATIVE	WP 0026
7. WATER TEMPERATURE INDICATOR INOPERATIVE	WP 0027
8. MANHOLE COVER LEAKING	WP 0028

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL-POWER INDICATOR LIGHT INOPERATIVE

INITIAL SETUP:

References
WP 0053

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Camel II connected to 240 VAC single phase power source

WARNING

Trailer must be secure. Always chock the wheels before working on or in the water tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- The operator shall start with the first malfunction, then proceed through each malfunction in order until the symptom is corrected, or end of work package is reached.
- The power indicator light will only illuminate when there is a working 240 VAC single phase external power source connected to the electrical control box and main power switch is on.

TROUBLESHOOTING PROCEDURE

POWER INDICATOR LIGHT INOPERATIVE

SYMPTOM

Power indicator light inoperative.

MALFUNCTION

Power indicator light in black out mode.

CORRECTIVE ACTION

Turn power indicator light lens cap (Figure 1) a quarter turn counter-clockwise.

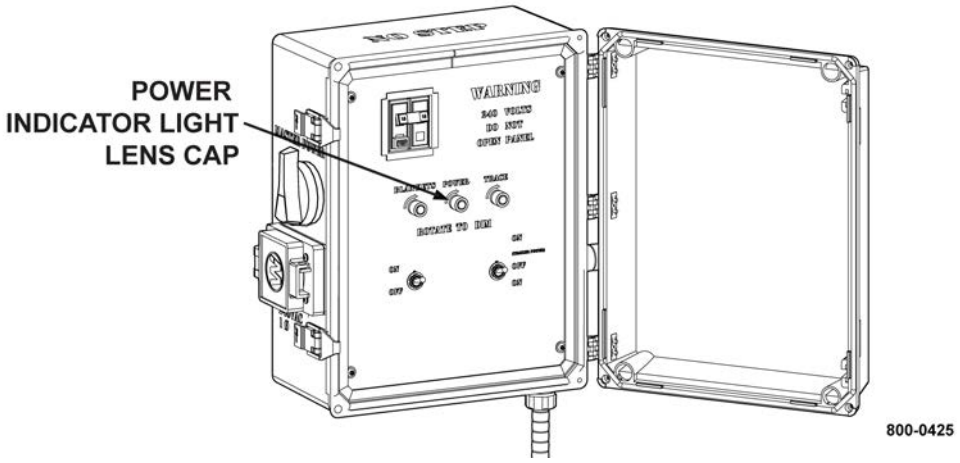


Figure 1. Power Indicator Light Lens Cap.

MALFUNCTION

Ground Fault Circuit Interrupter (GFCI).

CORRECTIVE ACTION

1. Test and reset GFCI breaker (WP 0053).
2. If GFCI breaker bar (Figure 2) trips to the down position after reset:
   a. Turn main power switch OFF (Figure 2).
   b. Disconnect power cord (Figure 2).
3. Notify Field Level Maintenance for diagnosis and repair.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

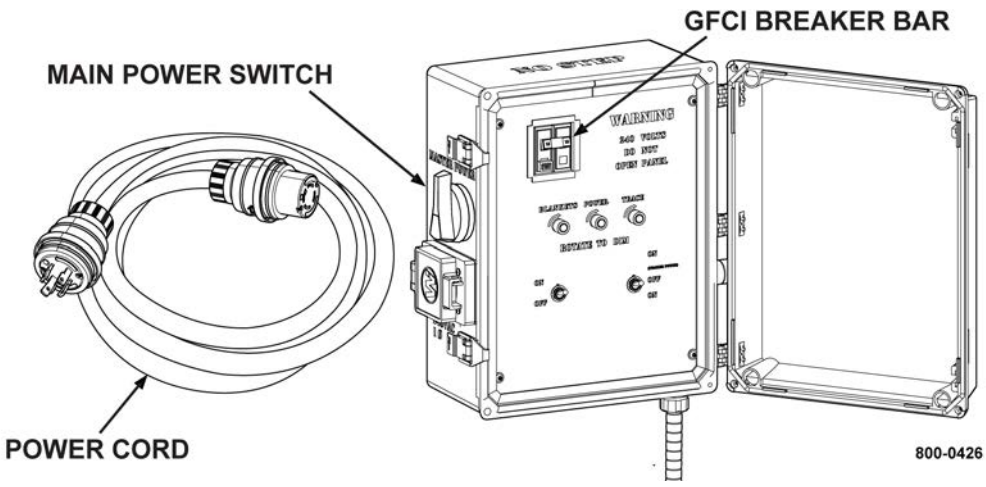


Figure 2. Power Cord and Main Power Switch.

MALFUNCTION

Main power switch.

CORRECTIVE ACTION

1. Ensure main power switch (Figure 3) is in the ON position.
2. If main power switch (Figure 3) does not function correctly, notify Field Level Maintenance for diagnosis and repair.

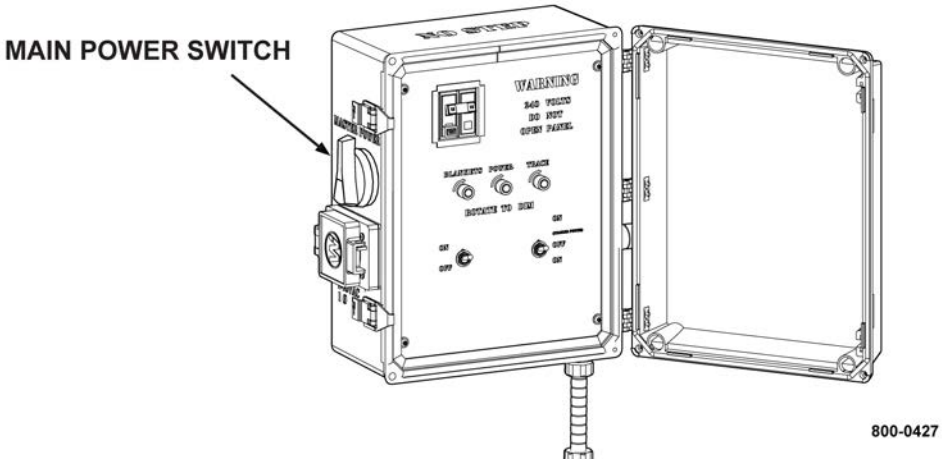


Figure 3. Main Power Switch.

POWER INDICATOR LIGHT INOPERATIVE - Continued

MALFUNCTION

External power plug.

CORRECTIVE ACTION

1. Check power cord (Figure 4) for damage, cuts, or exposed wires. If damaged replace power cord.
2. Ensure power cord (Figure 4) is connected to the external power plug (Figure 4) on electrical control box and a properly working 240 VAC single phase external power source.
3. If external power plug (Figure 4) is inoperative notify Field Level Maintenance for diagnosis and repair.

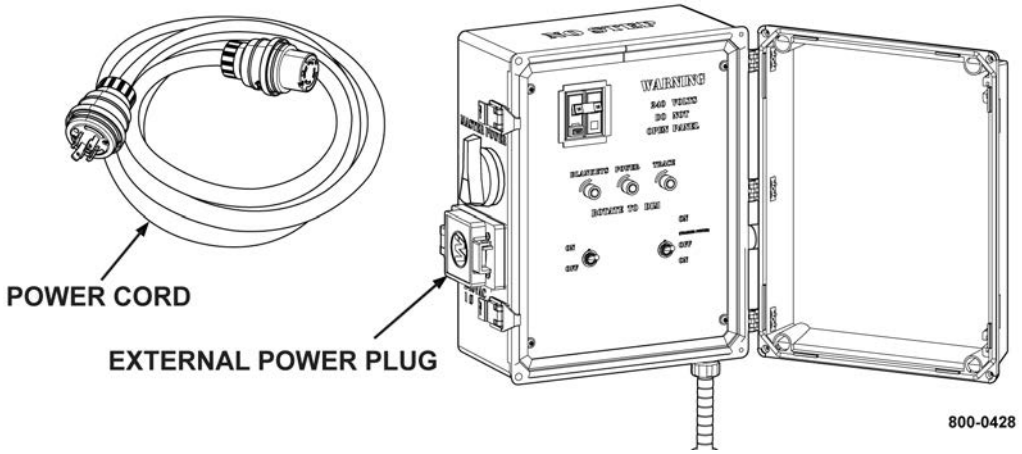


Figure 4. External Power Plug.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL-HEAT BLANKET INDICATOR LIGHT INOPERATIVE

INITIAL SETUP:

References
WP 0016
WP 0053

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Camel II connected to 240 VAC single phase power source

WARNING

Trailer must be secure. Always chock the wheels before working on or in the water tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.
- Heat blanket indicator light will only illuminate when thermostat reaches a preset temperature 45°F (7.22°C) and heat blankets are energized.

TROUBLESHOOTING PROCEDURE

HEAT BLANKET INDICATOR LIGHT INOPERATIVE

SYMPTOM

Heat blanket indicator light inoperative.

MALFUNCTION

No power at electrical control box.

CORRECTIVE ACTION

If power indicator light (Figure 1) is not illuminated refer to troubleshooting (WP 0016), power indicator light.

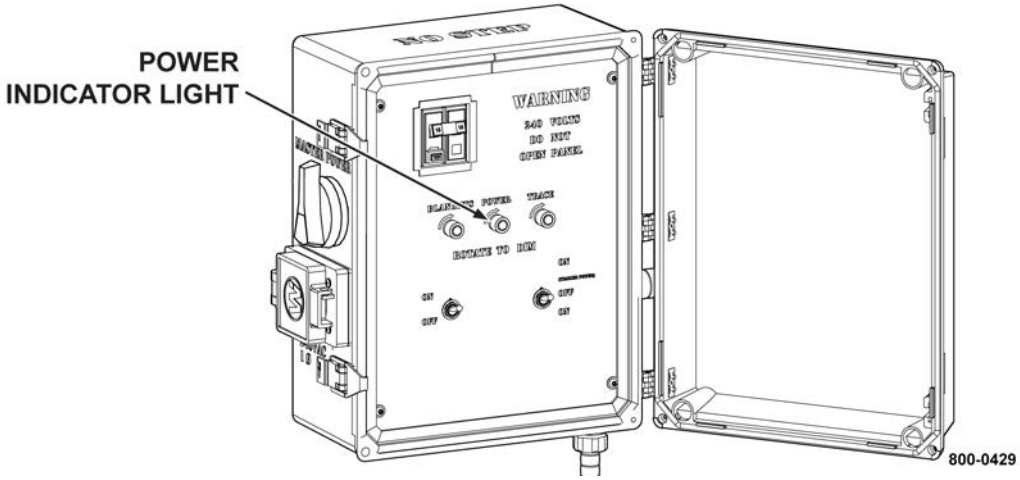


Figure 1. Power Indicator Light.

MALFUNCTION

Heat blanket toggle switch turned off.

CORRECTIVE ACTION

Turn heat blanket toggle switch (Figure 2) ON.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

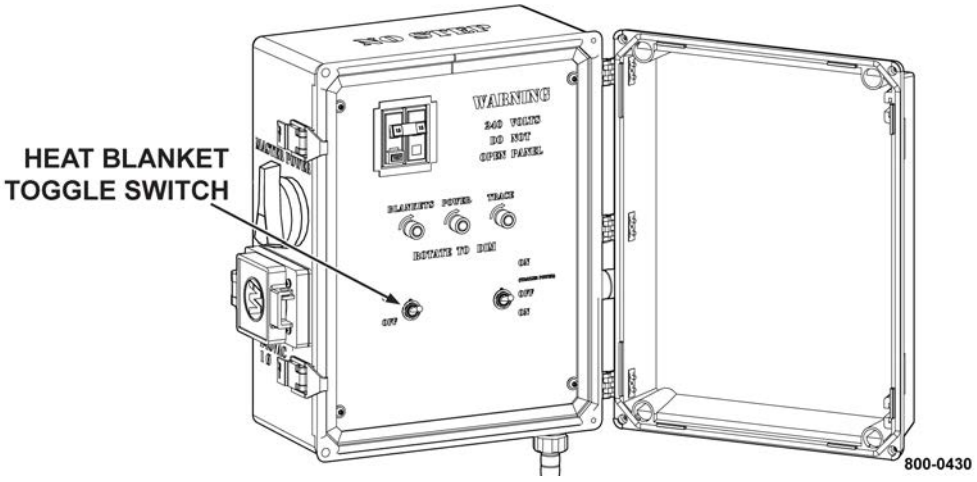


Figure 2. Heat Blanket Toggle Switch ON.

MALFUNCTION

Heat blanket indicator light in black out mode.

CORRECTIVE ACTION

Turn heat blanket indicator light lens cap (Figure 3) a quarter turn counter-clockwise.

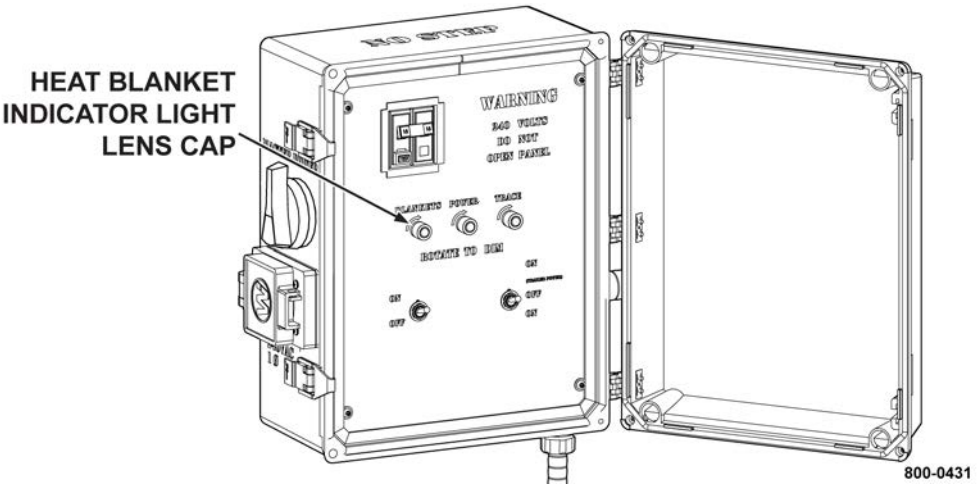


Figure 3. Heat Blanket Indicator Blackout.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

MALFUNCTION

Ground Fault Circuit Interrupter (GFCI).

CORRECTIVE ACTION

1. Test and reset GFCI breaker (WP 0053).
2. If GFCI breaker bar trips to the down position after reset:
   a. Turn main power switch OFF (Figure 4).
   b. Disconnect power cord (Figure 4).

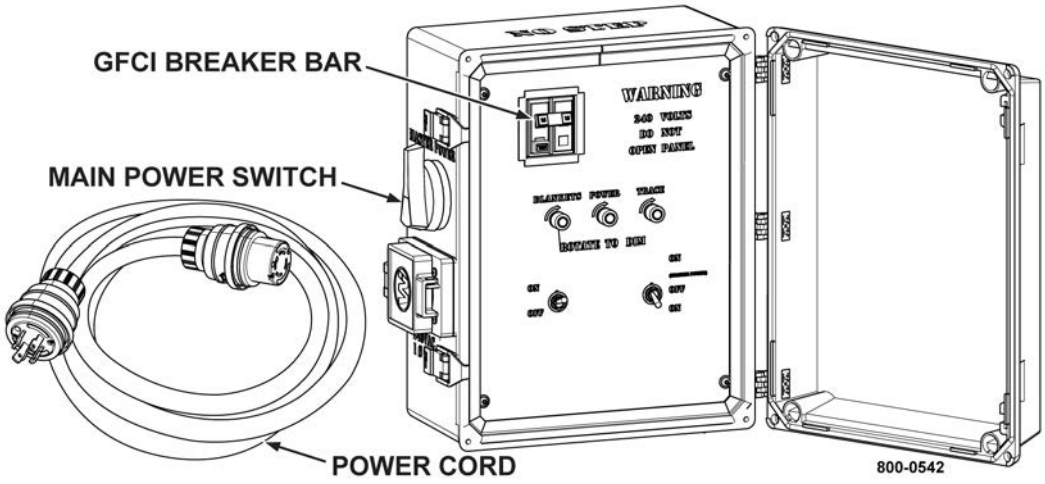


Figure 4. GFCI Malfunction.

3. Notify Field Level Maintenance for diagnosis and repair.

MALFUNCTION

Electrical Malfunction.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

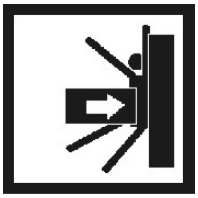
END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL-HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Coupled to Towing Vehicle (TM 9-2330-394-13&P)
Towing Vehicle, Running Lights ON

WARNING



Trailer must be secure. Always chock the wheels before working on or in the water tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.

TROUBLESHOOTING PROCEDURE

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE

SYMPTOM

Heat trace indicator light (trailer mode) inoperative.

MALFUNCTION

Heat trace toggle switch turned off.

CORRECTIVE ACTION

Turn heat trace toggle switch (Figure 1) to the trailer (ON) position.

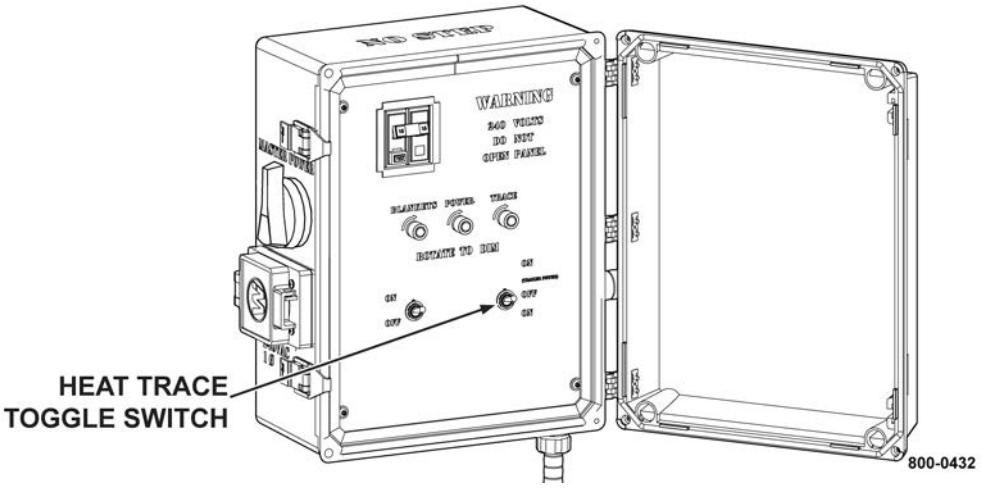


Figure 1. Heat Trace Toggle Switch Trailer Mode.

MALFUNCTION

Heat trace indicator light in black out mode.

CORRECTIVE ACTION

Turn heat trace indicator light lens cap (Figure 2) a quarter turn counter-clockwise.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

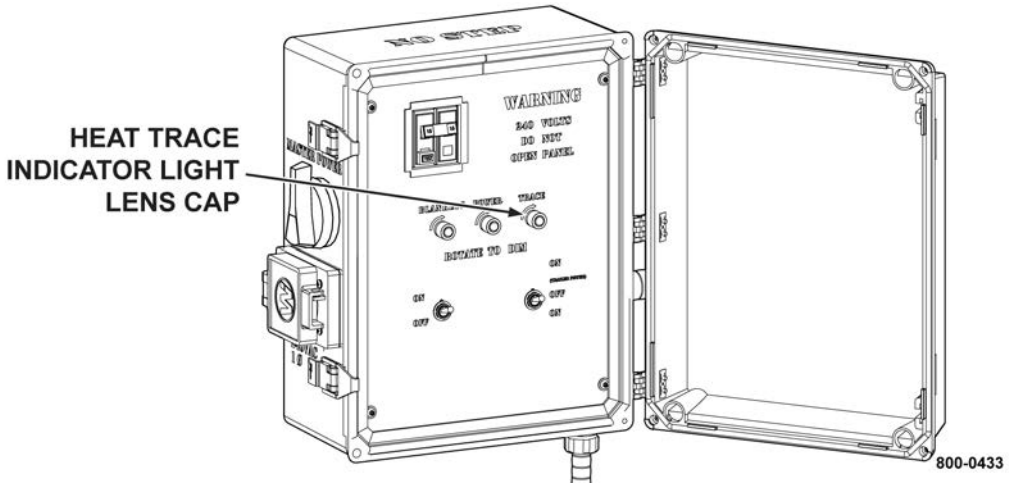


Figure 2. Heat Trace Indicator Light Lens Cap.

MALFUNCTION

Inter-vehicular harness inoperative.

CORRECTIVE ACTION

1. Ensure trailer is coupled to towing vehicle, inter-vehicular harness connected, refer to TM 9-2330-394-13&P.
2. Turn prime mover lights to ON position.
3. Inspect inter-vehicular harness for damage.

MALFUNCTION

Blown fuse.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL-HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE

INITIAL SETUP:

References
WP 0053

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Camel II connected to 240 VAC single phase power source

WARNING

Trailer must be secure. Always chock the wheels before working on or in the water tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.
- Camel II electrical control box must be connected to an external 240 VAC single phase power source, with main power switch on for heat trace to work in external power mode.

TROUBLESHOOTING PROCEDURE

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE

SYMPTOM

Heat trace indicator light (240 VAC single phase power mode) inoperative.

MALFUNCTION

Heat trace toggle switch turned off.

CORRECTIVE ACTION

Turn heat trace toggle switch to the DOWN (external power position) (Figure 1).

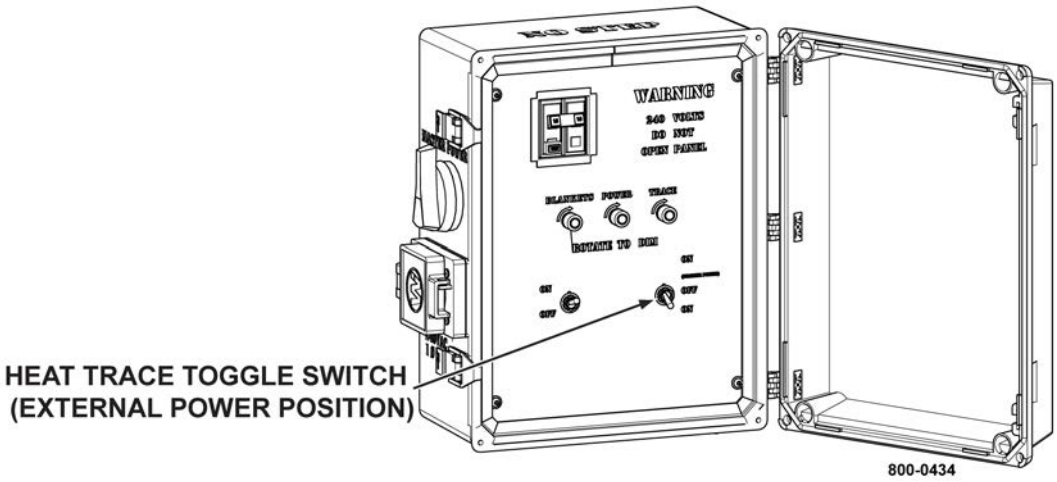


Figure 1. External Power Position (Down).

MALFUNCTION

Heat trace indicator light in black out mode.

CORRECTIVE ACTION

Turn heat trace indicator light lens cap (Figure 2) a quarter turn counter-clockwise.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

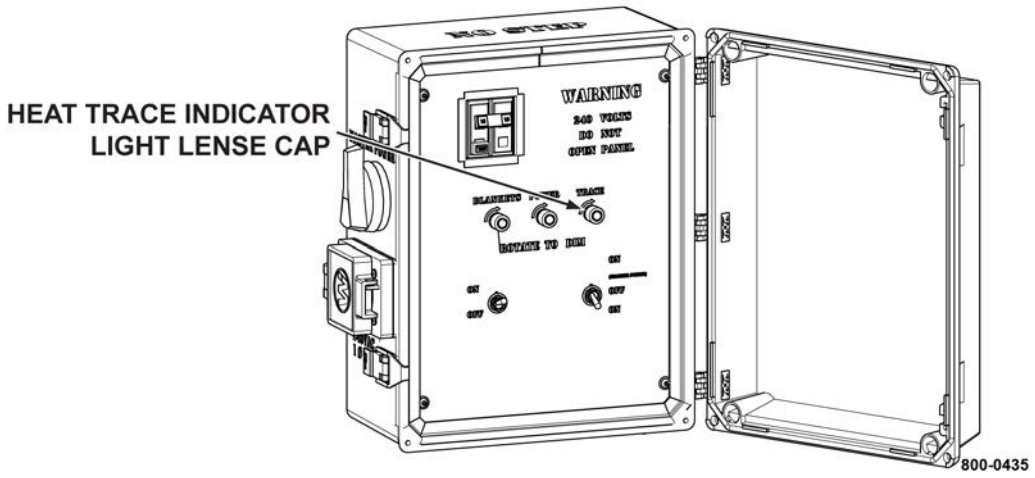


Figure 2. Heat Trace Indicator Light Lens Cap.

MALFUNCTION

Ground Fault Circuit Interrupter (GFCI).

CORRECTIVE ACTION

1. Test and reset GFCI breaker (WP 0053).
2. If GFCI breaker bar trips to the down position after reset:
   a. Turn main power switch OFF (Figure 3).
   b. Disconnect power cord (Figure 3).

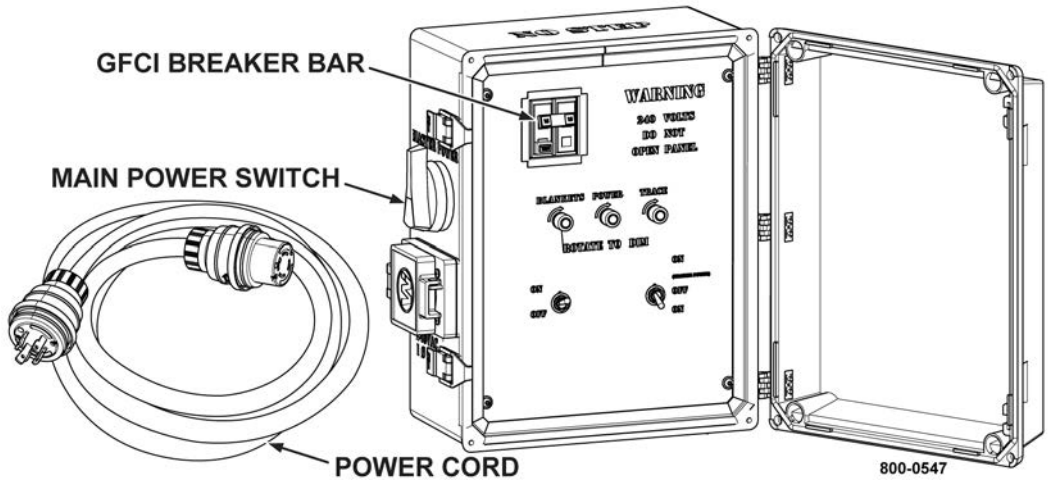


Figure 3. GFCI Malfunction.

3. Notify Field Level Maintenance for diagnosis and repair.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

MALFUNCTION

Electrical Malfunction.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

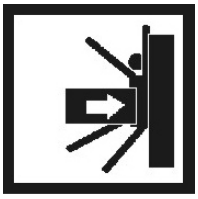
END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL-HEAT TRACE/HEAT BLANKET INOPERATIVE

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



Trailer must be secure. Always chock the wheels before working on or in the water tank. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

HEAT TRACE/HEAT BLANKET INOPERATIVE

SYMPTOM

Water freezing.

MALFUNCTION

Heat trace/heat blanket not working correctly.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

END OF WORK PACKAGE

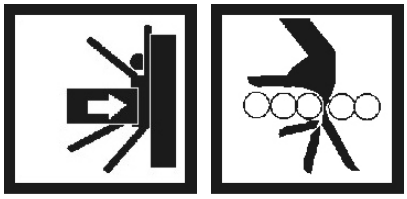
OPERATOR MAINTENANCE
PLUMBING-DISPENSING SYSTEM INOPERATIVE

INITIAL SETUP:

References
WP 0005

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.

TROUBLESHOOTING PROCEDURE

DISPENSING SYSTEM INOPERATIVE

SYMPTOM

Water will not dispense.

MALFUNCTION

Water tank empty.

CORRECTIVE ACTION

If needed fill water tank to required level (WP 0005).

MALFUNCTION

Main dispensing valve inoperative.

CORRECTIVE ACTION

With dispensing system disconnected, open main dispensing valve (Figure 1). If water does not release or main dispensing valve does not operate correctly, notify Field Level Maintenance for diagnosis and repair.

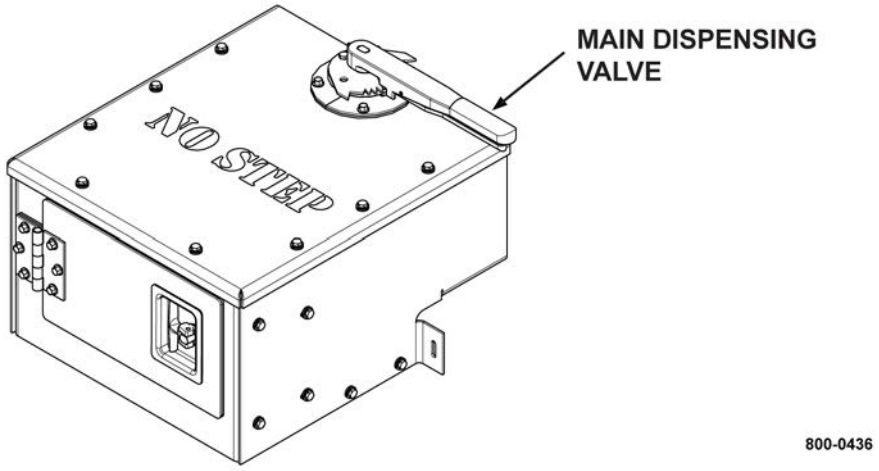


Figure 1. Main Dispensing Valve.

END OF WORK PACKAGE

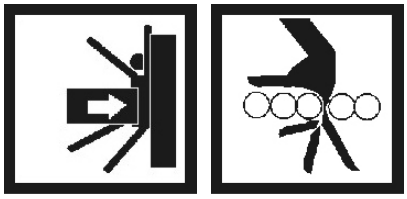
OPERATOR MAINTENANCE
PLUMBING-DISPENSING SYSTEM VALVE INOPERATIVE

INITIAL SETUP:

References
WP 0005

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.

TROUBLESHOOTING PROCEDURE

DISPENSING SYSTEM VALVE INOPERATIVE

SYMPTOM

Dispensing system valve inoperative.

MALFUNCTION

Valve damaged or not working.

CORRECTIVE ACTION

1. Visually inspect to ensure there is no blockage or debris.
2. Connect dispensing system to water tank and open main dispensing valve (WP 0005).
3. Rotate dispensing system valve handle (Figure 1) to the open position to release water. If water does not release notify Field Level Maintenance for diagnosis and repair.

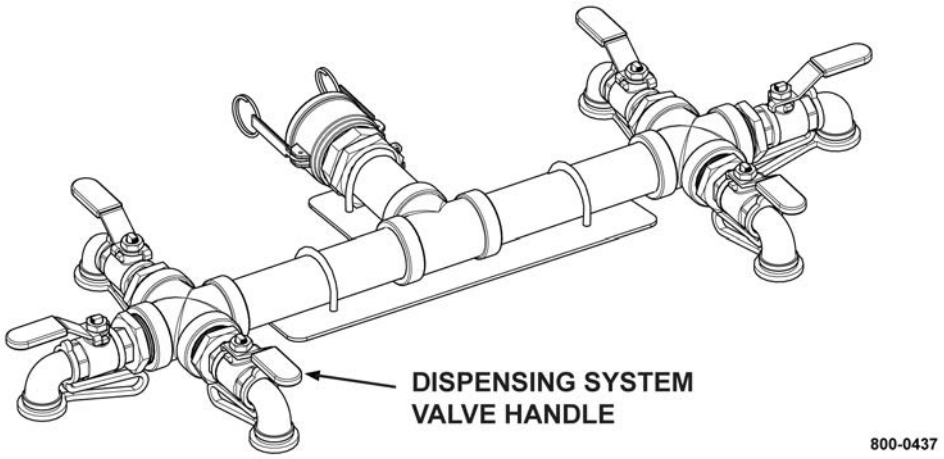


Figure 1. Dispensing System Valve Handle.

SYMPTOM

Dispensing system valve leaks.

MALFUNCTION

Leak detected.

CORRECTIVE ACTION

1. Ensure dispensing system valve is turned OFF.
2. If leak continues, Notify Field Level Maintenance for diagnosis and repair.

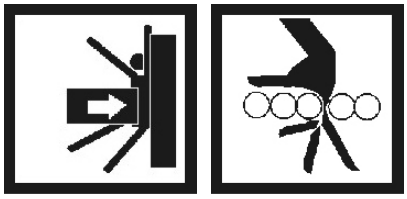
END OF WORK PACKAGE

OPERATOR MAINTENANCE
PLUMBING-DISPENSING PIPE FITTINGS LEAKING

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

DISPENSING PIPE FITTINGS LEAKING

SYMPTOM

Pipe fittings leaking.

MALFUNCTION

Leak detected.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

END OF WORK PACKAGE

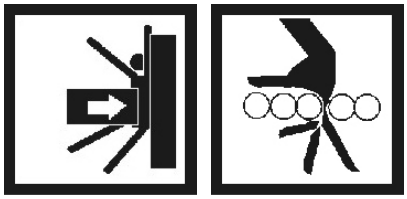
OPERATOR MAINTENANCE
PLUMBING-DISPENSING HOSE ASSEMBLY INOPERATIVE

INITIAL SETUP:

Materials/Parts
Circular Gasket (WP 0188, Table 2, Item 9)
Dispensing Hose Assembly (WP 0188, Table 2, Item 11)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

DISPENSING HOSE ASSEMBLY INOPERATIVE

SYMPTOM

Dispensing hose assembly leaking.

MALFUNCTION

Leak detected.

CORRECTIVE ACTION

NOTE

Circular gasket replacement requires no tools. Circular gasket slides into quick disconnect female cap.

1. Ensure circular gasket (Figure 1) is present in quick disconnect female cap (Figure 1). Replace circular gasket as needed.
2. Inspect dispensing hose assembly (Figure 1) for damage. Replace dispensing hose assembly as needed.

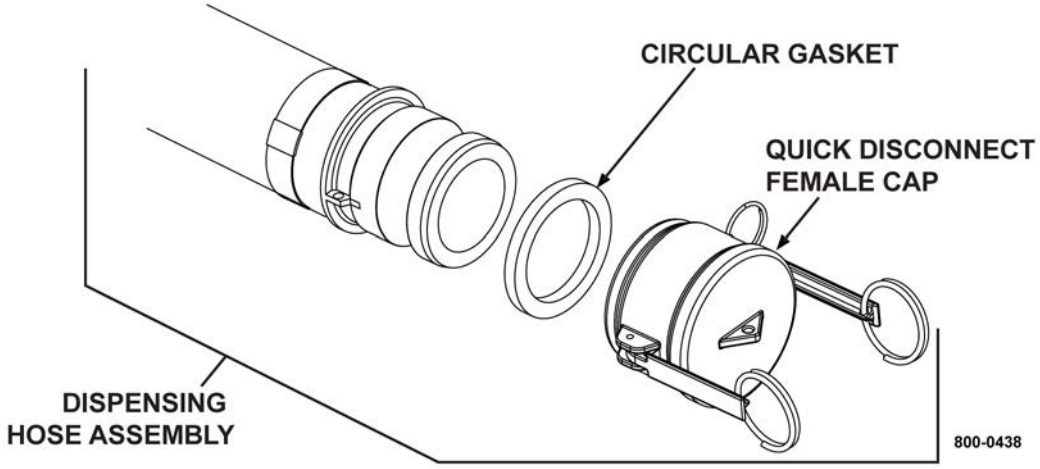


Figure 1. Circular Gasket and Quick Disconnect Female Cap.

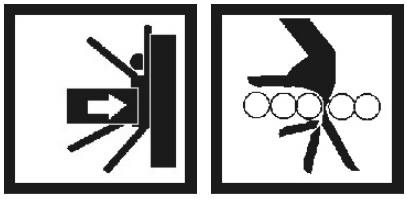
END OF WORK PACKAGE

OPERATOR MAINTENANCE
PLUMBING-FRONT FLANGE COVER LEAKING

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

FRONT FLANGE COVER LEAKING

SYMPTOM

Front flange cover leaking.

MALFUNCTION

Leak detected.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

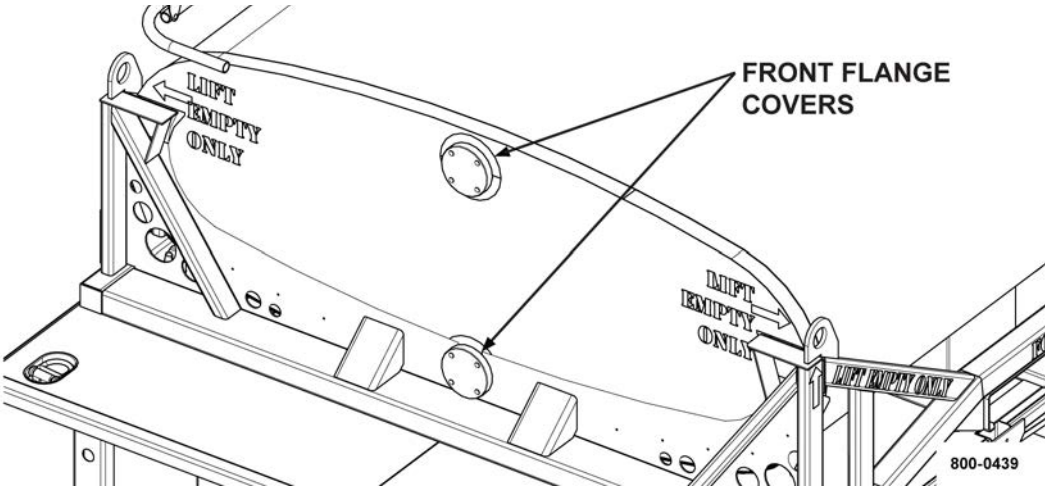


Figure 1. Front Flange Covers.

END OF WORK PACKAGE

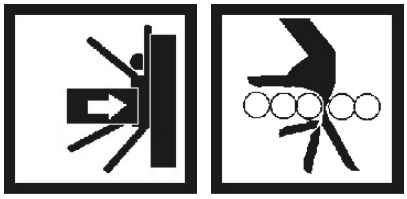
OPERATOR MAINTENANCE
PLUMBING-WATER LEVEL INDICATOR INOPERATIVE

INITIAL SETUP:

References
WP 0005

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

WATER LEVEL INDICATOR INOPERATIVE

SYMPTOM

Water level indicator inoperative.

MALFUNCTION

Water level indicator inoperative.

CORRECTIVE ACTION

1. Ensure water is in tank, refer to filling operations (WP 0005) as needed.

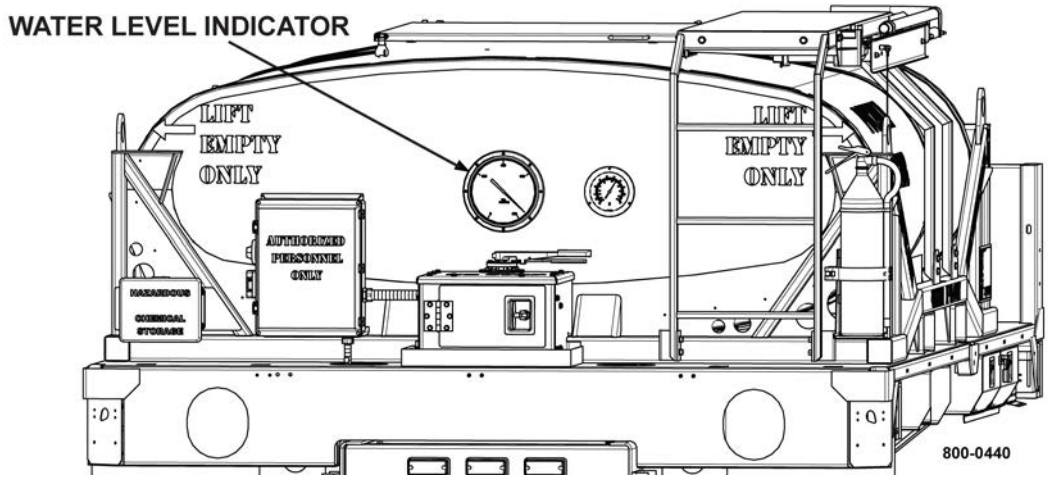


Figure 1. Water Level Indicator.

2. If water level indicator (Figure 1) is not working, notify Field Level Maintenance for diagnosis and repair.

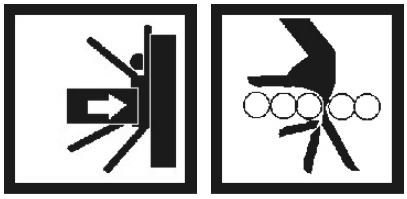
END OF WORK PACKAGE

OPERATOR MAINTENANCE
PLUMBING-WATER TEMPERATURE INDICATOR INOPERATIVE

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

Water temperature indicator measures temperature at tank sensor. Temperature indicated may be different than outside temperature.

TROUBLESHOOTING PROCEDURE

WATER TEMPERATURE INDICATOR INOPERATIVE

SYMPTOM

Water temperature indicator inoperative.

MALFUNCTION

Water temperature indicator inoperative.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

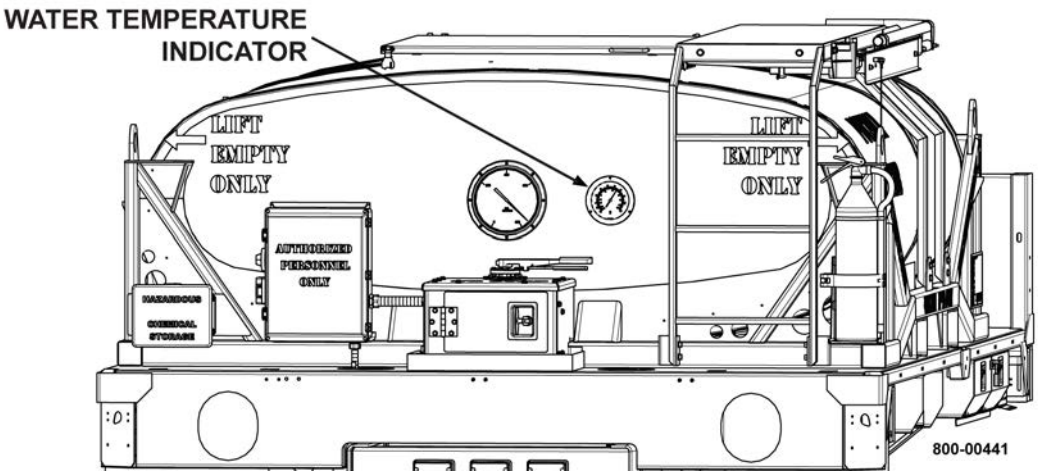


Figure 1. Water Temperature Indicator.

END OF WORK PACKAGE

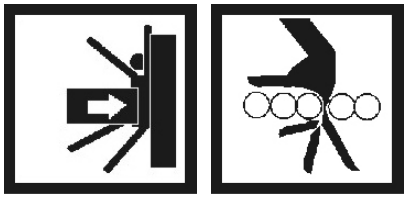
OPERATOR MAINTENANCE
PLUMBING-MANHOLE COVER LEAKING

INITIAL SETUP:

Tools and Special Tools
Hammer, Dead Blow (WP 0188, Table 2, Item 20)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

The operator shall start with the first malfunction then proceed through each malfunction in order until the symptom is corrected or end of work package is reached.

TROUBLESHOOTING PROCEDURE

MANHOLE COVER LEAKING

SYMPTOM

Leaking around manhole cover.

MALFUNCTION

Latching bolts loose.

CORRECTIVE ACTION

1. Ensure manhole cover (Figure 1) is centered on the manhole collar (Figure 1).
2. Hand tighten six latching bolts (Figure 1) against manhole cover.

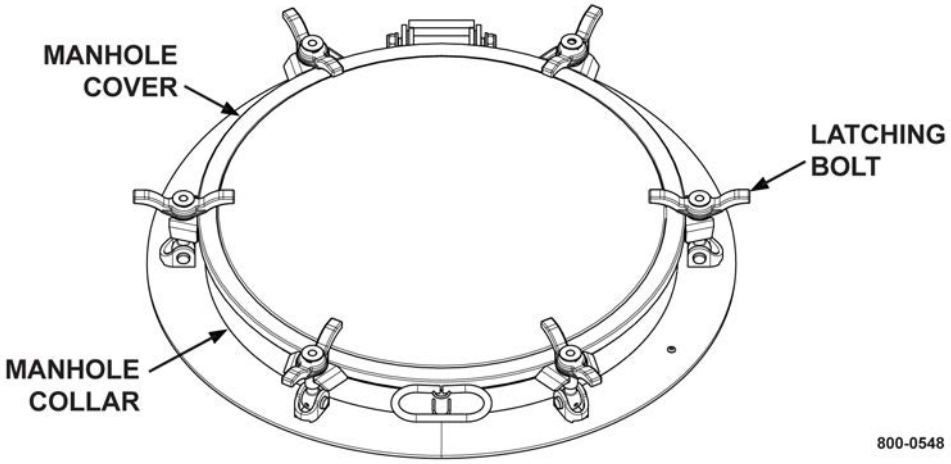


Figure 1. Tighten Latching Bolts.

3. If leaking continues around manhole cover (Figure 2), tighten each latching bolt (Figure 2) a half rotation using dead blow hammer in the following sequence 1-4-2-5-3-6 (Figure 2).

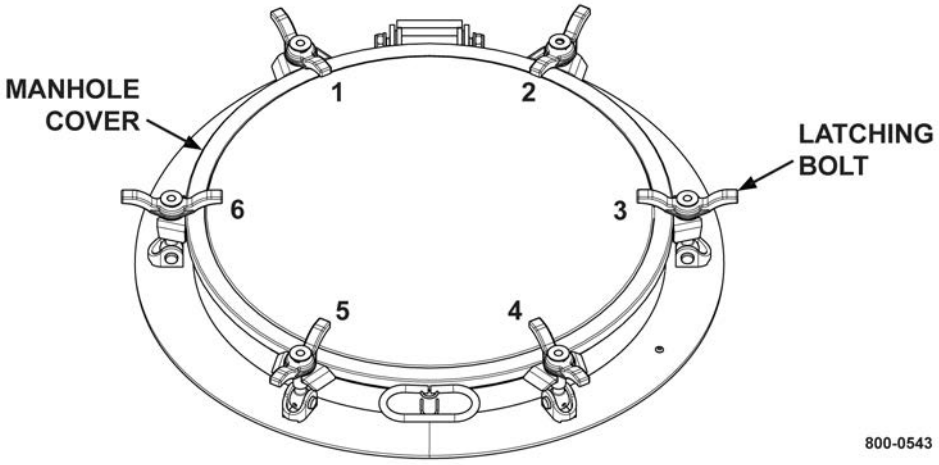


Figure 2. Latching Bolt Tightening Sequence.

MANHOLE COVER LEAKING - Continued

MALFUNCTION

Seal inoperative.

CORRECTIVE ACTION

1. Inspect manhole cover seal (Figure 3) for worn or damaged areas.
2. If damaged, notify Field Level Maintenance for diagnosis and repair.

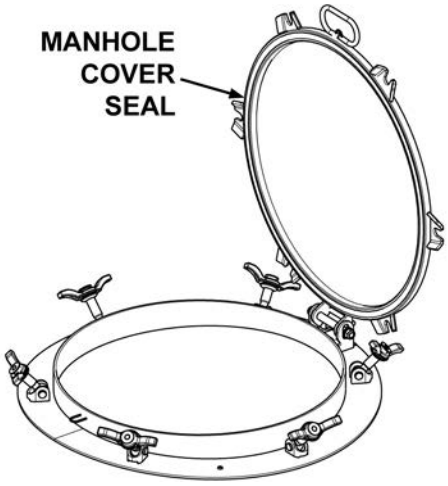


Figure 3. Manhole Cover Seal.

MALFUNCTION

Manhole cover has bent or broken components.

CORRECTIVE ACTION

Notify Field Level Maintenance for diagnosis and repair.

END OF WORK PACKAGE

CHAPTER 4

FIELD TROUBLESHOOTING PROCEDURES

FIELD MAINTENANCE
TROUBLESHOOTING INTRODUCTION

Introduction

NOTE

The Troubleshooting Procedures for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. Utilize these procedures for all troubleshooting procedures performed on the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT).

Troubleshooting Index

The Troubleshooting Index (WP 0030), is a quick reference index for finding troubleshooting procedures. Associated with each symptom name is a work package sequence number representing the starting point in a troubleshooting sequence. Should any one symptom require more than one troubleshooting sequence to arrive at the most likely area of investigation, the additional starting point numbers are presented. As the troubleshooting activity progresses through to the conclusion of a particular sequence, a reference is made to the next logical troubleshooting sequence by work package sequence number or by referring to the Troubleshooting Index to locate the next failure symptom work package. This type of activity continues until successful fault isolation is achieved.

Troubleshooting Procedures

The troubleshooting work packages contain tables listing the malfunctions, tests or inspections, and corrective action required to return the Camel II to normal operation. Perform the steps in the order they appear in the tables.

Each work package is headed by an initial setup. This setup outlines what is needed as well as certain conditions which must be met before starting the task. DO NOT START A TASK UNTIL:

You understand the task.
You understand what you are to do.
You understand what is needed to do the work.
You have the things you need.

This manual cannot list all malfunctions that may occur, or all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

END OF WORK PACKAGE

FIELD MAINTENANCE
TROUBLESHOOTING INDEX

TROUBLESHOOTING INDEX

Malfunction/Symptom **Troubleshooting Procedure**

Electrical

1. POWER INDICATOR LIGHT INOPERATIVE ..... WP 0031
2. HEAT BLANKET INDICATOR LIGHT INOPERATIVE ..... WP 0032
3. HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE ..... WP 0033
4. HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE ..... WP 0034
5. HEAT BLANKET INOPERATIVE ..... WP 0035
6. HEAT TRACE INOPERATIVE ..... WP 0036
7. 12 VDC POWER SUPPLY INOPERATIVE ..... WP 0037
8. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER INOPERATIVE ..... WP 0038
9. HEAT BLANKET THERMOSTAT INOPERATIVE ..... WP 0039
10. 4 POLE CONTACTOR INOPERATIVE ..... WP 0040

Plumbing

1. DISPENSING SYSTEM INOPERATIVE ..... WP 0041
2. MAIN DISPENSING VALVE LEAKING ..... WP 0042
3. DISPENSING PIPE FITTINGS LEAKING ..... WP 0043
4. DISCHARGE HOSE EXTENSION ASSEMBLY LEAKING ..... WP 0044
5. FRONT FLANGE COVER LEAKING ..... WP 0045
6. WATER LEVEL INDICATOR INOPERATIVE ..... WP 0046
7. WATER TEMPERATURE INDICATOR INOPERATIVE ..... WP 0047
8. MANHOLE COVER LEAKING ..... WP 0048

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL-POWER INDICATOR LIGHT INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)
- Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)

References (cont.)
- WP 0037
- WP 0118
- WP 0131
- WP 0132
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems. Perform all PMCS and operator troubleshooting procedures first.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- The power indicator light will only illuminate when there is a working 240 VAC single phase external power source connected to the electrical control box and main power switch is ON.
- Refer to electrical wiring diagram (FO-1), electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

POWER INDICATOR LIGHT INOPERATIVE

SYMPTOM

Power indicator light inoperative.

MALFUNCTION

Power indicator light inoperative.

CORRECTIVE ACTION

1. Turn main power switch (Figure 1) to OFF position and disconnect power cord (Figure 1) from external power plug (Figure 1) on electrical control box (Figure 1).
2. Open electrical control box lid (Figure 1).
3. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1) to electrical control box (Figure 1).

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

4. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).
5. Connect power cord (Figure 1) to external power plug (Figure 1) on electrical control box.
6. Ensure main power switch is ON (Figure 1).

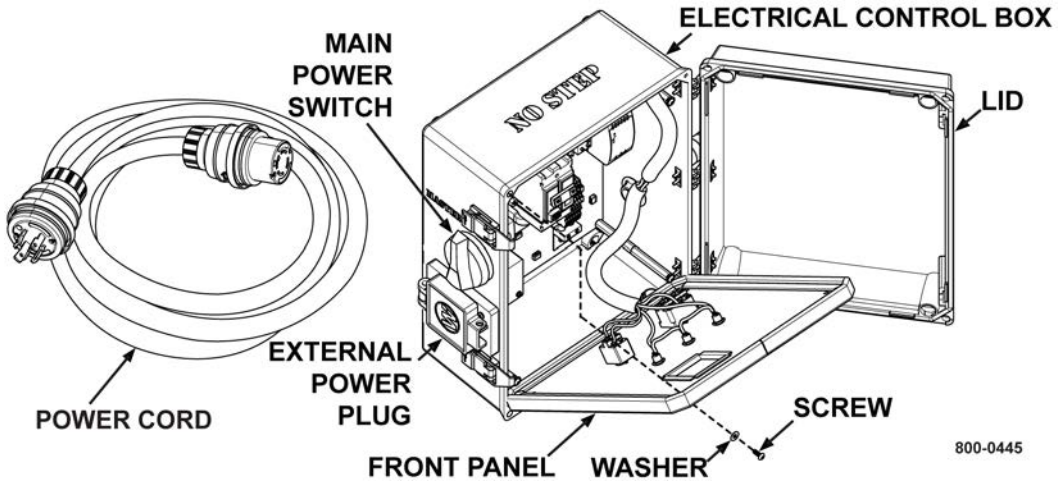


Figure 1. Electrical Control Box Front Panel Removal.

7. Using a multi-meter, measure DC voltage between positive blue wire 1AW23 (Figure 2) and negative purple wire W4 (Figure 2) where they connect to power indicator light holder (Figure 2).

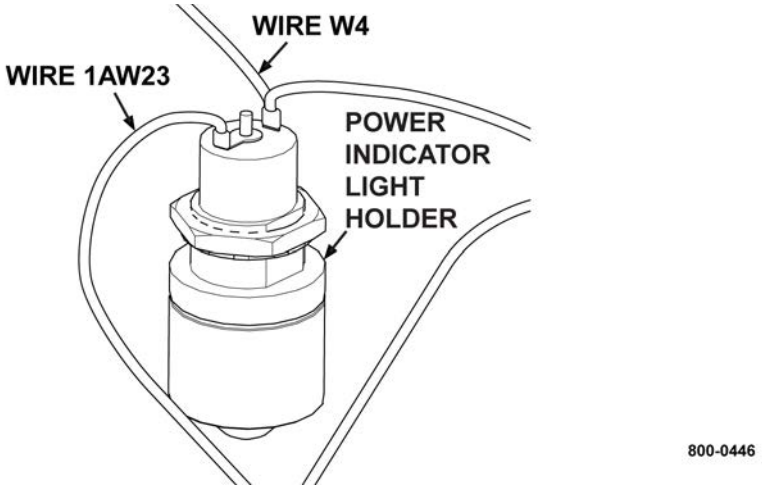


Figure 2. Power Indicator Light Holder.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

8. Does voltage measure between 8-12 VDC?
    a. YES-Proceed to Malfunction: Faulty indicator light bulb.
    b. NO-Proceed to Malfunction: No power from 12 VDC power supply.

MALFUNCTION

Faulty indicator light bulb.

CORRECTIVE ACTION

1. Turn main power switch to OFF position.
2. Disconnect power cord from external power plug on electrical control box (Figure 1).
3. Remove indicator light bulb (WP 0132).
4. Using a multi-meter, check continuity between terminals of bulb.
5. Is continuity present?
    a. YES-Proceed to Malfunction: Faulty indicator light holder.
    b. NO-Install new indicator light bulb (WP 0132).
        (1) Install all removed components.
        (2) Connect power cord to external power plug, turn main power switch to ON position.
        (3) Verify that component operates correctly.

MALFUNCTION

Faulty indicator light holder.

CORRECTIVE ACTION

1. Replace indicator light holder (WP 0131).
2. Connect power cord to external power plug, turn main power switch to ON position.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

3. Verify that component operates correctly.
4. Install all removed components.

MALFUNCTION

No power from 12 VDC power supply.

CORRECTIVE ACTION

1. Using a multi-meter, measure DC voltage between positive blue wire 1AW11 (Figure 3) and negative purple wire 1AW9 (Figure 3) at 12 VDC power supply output terminals (Figure 3).

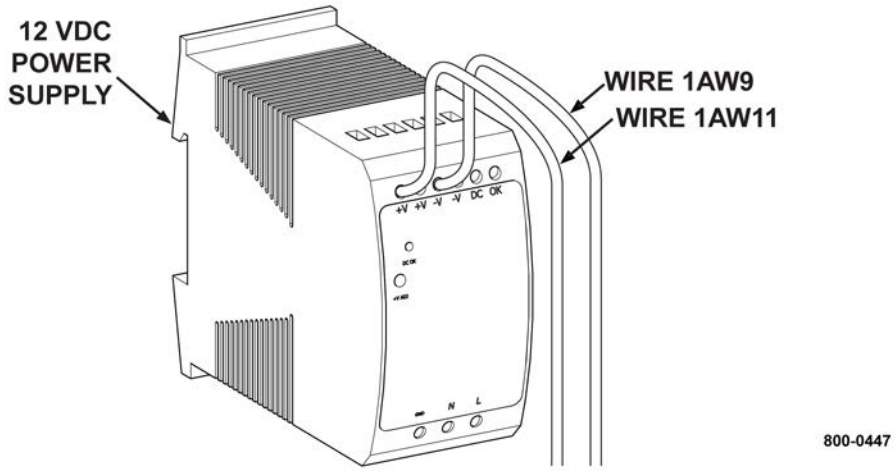


Figure 3. 12 VDC Power Supply.

2. Is voltage between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty wiring.
   b. NO-Refer to Troubleshooting: 12 VDC power supply inoperative (WP 0037).

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Using a multi-meter, check continuity between each end of positive blue wire 1AW11 (Figure 4) between the 12 VDC power supply (Figure 4) and the blue terminal block (Figure 4).

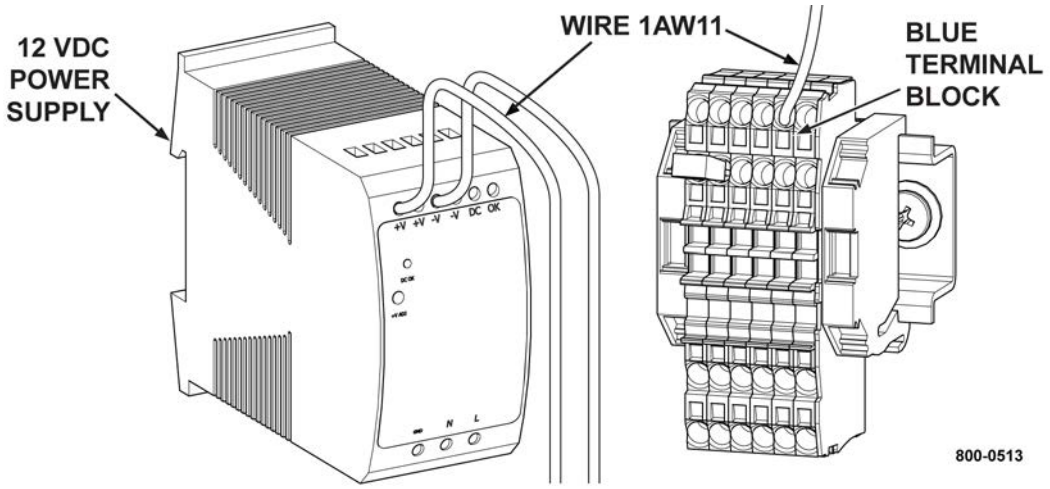


Figure 4. Continuity between 12 VDC Power Supply and Blue Terminal Block.

3. Using a multi-meter, check continuity between each end of positive blue wire 1AW23 (Figure 5) between the blue terminal block (Figure 5) and the power indicator light holder (Figure 5).

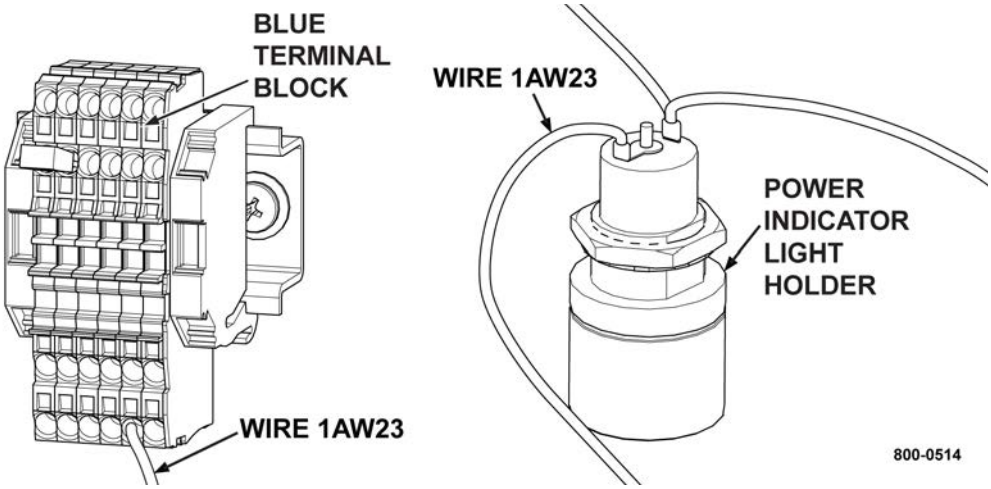


Figure 5. Continuity between Blue Terminal Block and Power Indicator Light Holder.

4. Is continuity present at each wire?
   a. YES-Proceed to step 5.
   b. NO-Replace the faulty wire which did not have continuity. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

(3) Install all removed components.

5. Using a multi-meter, check continuity between each end of negative purple wire 1AW9 (Figure 6), between 12 VDC power supply (Figure 6) and orange terminal block (Figure 6).

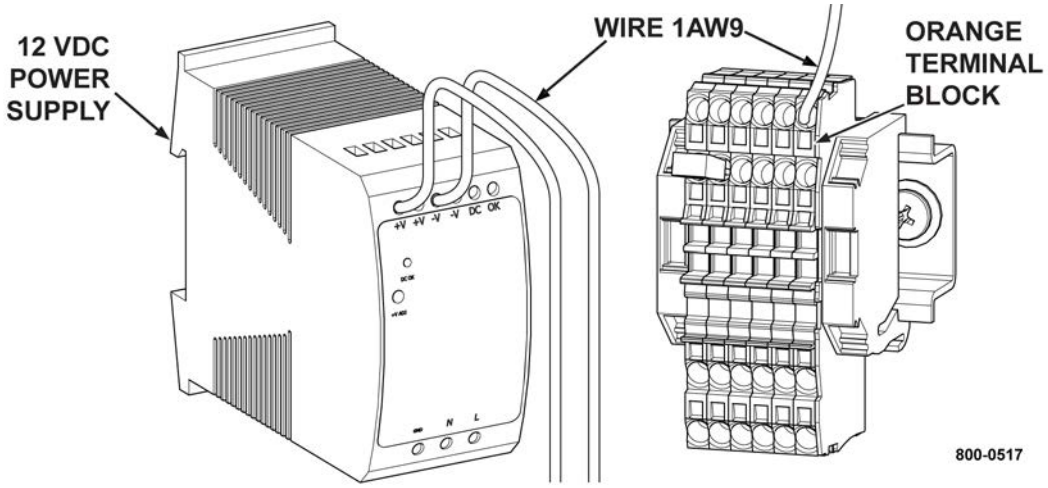


Figure 6. Continuity between 12 VDC Power Supply and Orange Terminal Block.

6. Using a multi-meter, check continuity between each end of negative purple wire 1AW26 (Figure 7), between orange terminal block (Figure 7) and heat trace light holder (Figure 7).

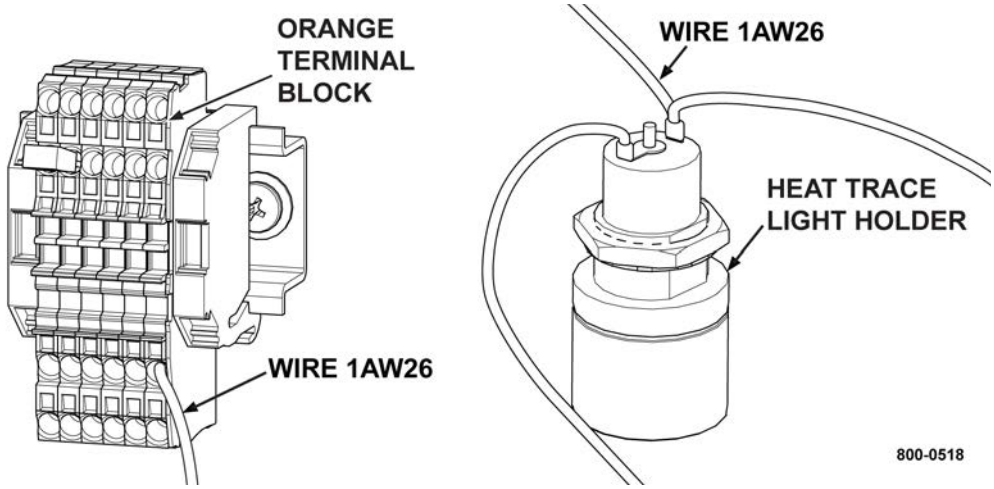


Figure 7. Continuity between Orange Terminal Block and Heat Trace Light Holder.

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

7. Using a multi-meter, check continuity between each end of negative purple wire W4 (Figure 8) between heat trace light holder (Figure 8) and power indicator light holder (Figure 8).

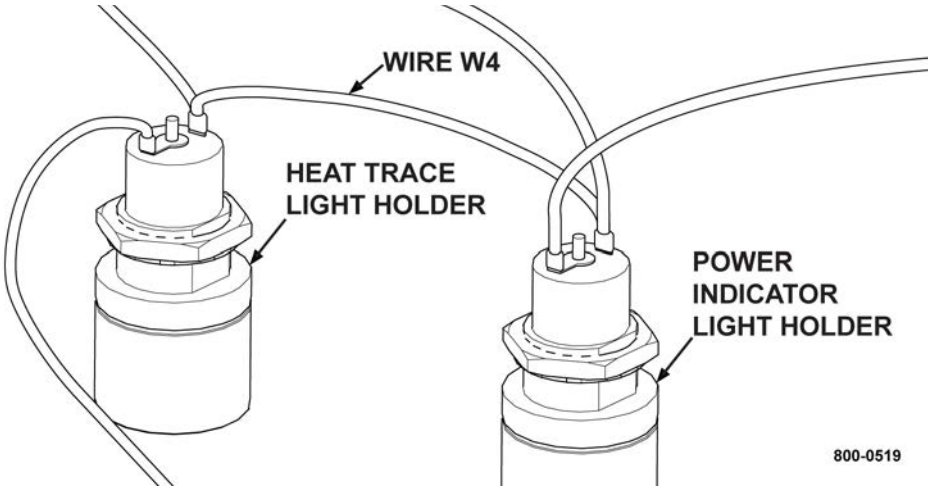


Figure 8. Continuity between Heat Trace Light Holder and Power Indicator Light Holder.

8. Is continuity present at each wire?
   a. YES-Proceed to Malfunction: Faulty terminal block.
   b. NO-Replace the faulty wire which did not have continuity. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty Terminal Block.

CORRECTIVE ACTION

NOTE

Always inspect wiring connections at terminal blocks. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in terminal block are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that malfunction is present before performing this procedure.

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check continuity between each end of blue terminal block (Figure 9).
3. Using a multi-meter, check continuity between each end of orange terminal block (Figure 9).

POWER INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

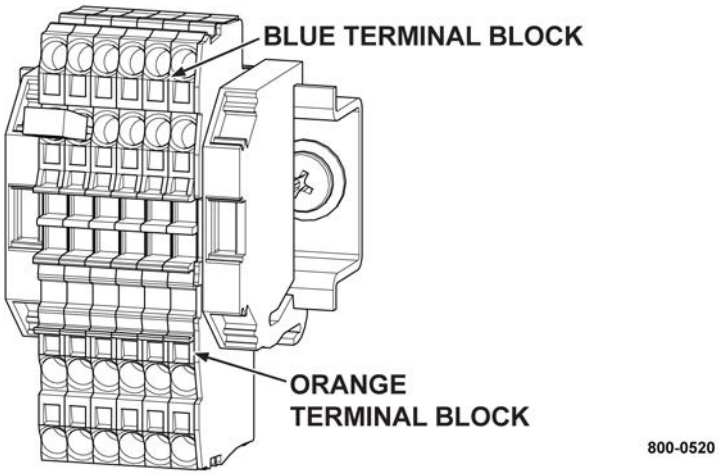


Figure 9. Blue and Orange Terminal Blocks.

4. Is continuity present at each terminal block?
   a. YES-Proceed back to beginning of troubleshooting procedure: Power indicator light inoperative.
   b. NO-Replace faulty terminal block (WP 0118).
      (1) Install all removed wires.
      (2) Connect power cord to external power plug, turn main power switch to ON position.
      (3) Verify that component operates correctly.
      (4) Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL-HEAT BLANKET INDICATOR LIGHT INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0039
- WP 0040
- WP 0053
- WP 0111

References (cont.)
- WP 0116
- WP 0118
- WP 0123
- WP 0131
- WP 0132
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Heat blanket indicator light will only illuminate when a working 240 VAC single phase external power source is connected to the electrical control box, main power switch is ON, and temperature control reaches a preset temperature.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT BLANKET INDICATOR LIGHT INOPERATIVE

SYMPTOM

Heat blanket indicator light inoperative.

MALFUNCTION

Heat blanket thermostat inoperative.

CORRECTIVE ACTION

1. Test and reset Ground Fault Circuit Interrupter (GFCI) (WP 0053).
2. Turn main power switch (Figure 1) to OFF position and disconnect power cord from external power plug (Figure 1) on electrical control box (Figure 1).
3. Open electrical control box lid (Figure 1).

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

4. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1) to electrical control box (Figure 1).
5. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).

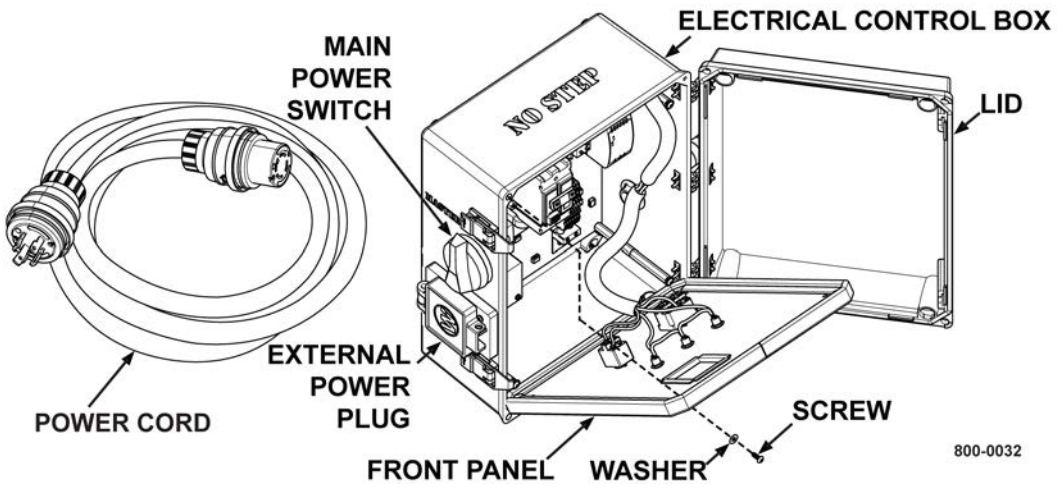


Figure 1. Electrical Control Box Front Panel Removal.

6. Connect power cord to external power plug (Figure 1), turn main power switch to ON position.
7. Ensure main power switch (Figure 2) is in ON position.
8. Is heat blanket thermostat (Figure 2) displaying a temperature in digital window?
   a. YES-Proceed to step 9.
   b. NO-Proceed to troubleshooting work package: Heat blanket thermostat inoperative (WP 0039).

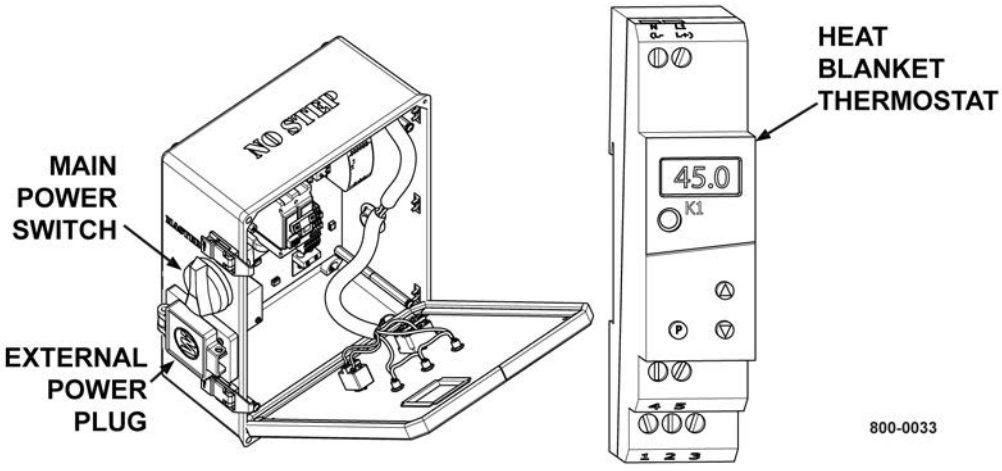


Figure 2. Temperature Display.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

9. Is temperature being displayed, below 45°F (7.22°C)?

NOTE

Refer to heat blanket thermostat adjustment (WP 0116) to ensure thermostat is preset at 45°F (7.22°C).

a. YES-Proceed to step 10.

b. NO-Heat blanket indicator light will not illuminate until heat blanket thermostat reads below 45°F (7.22°C) and heat blankets are supplied power.

10. Using a multi-meter, measure DC power between positive blue wire 1AW21 (Figure 3) and negative purple wire W5 (Figure 3) where they connect to heat blanket indicator light holder (Figure 3).

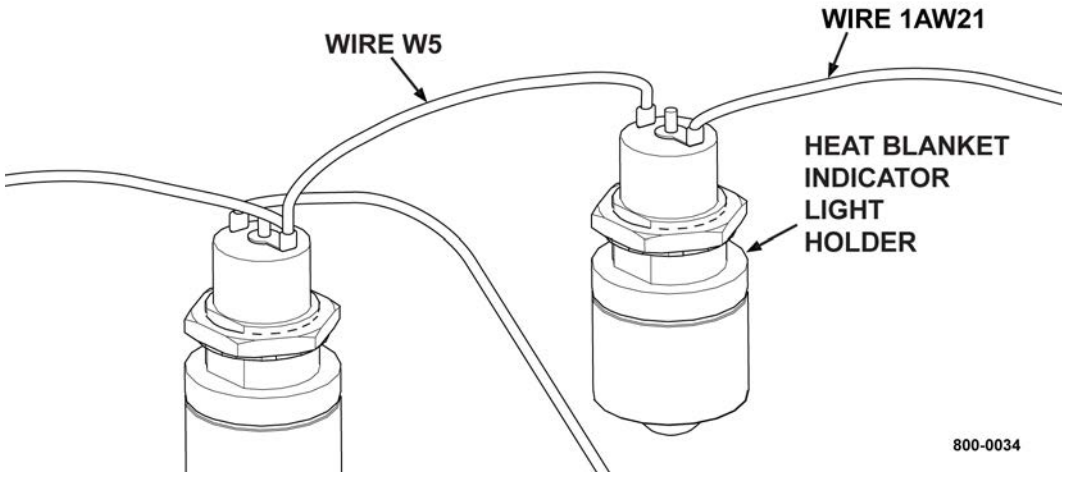


Figure 3. Heat Blanket Indicator Light Holder.

11. Does voltage measure between 8-12 VDC?

a. YES-Proceed to Malfunction: Faulty indicator light bulb.

b. NO-Proceed to step 12.

12. Using a multi-meter, measure AC voltage between positive black wire 1AW19 (Figure 4) at terminal #2 (Figure 4) of heat blanket thermostat (Figure 4) and a known ground.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

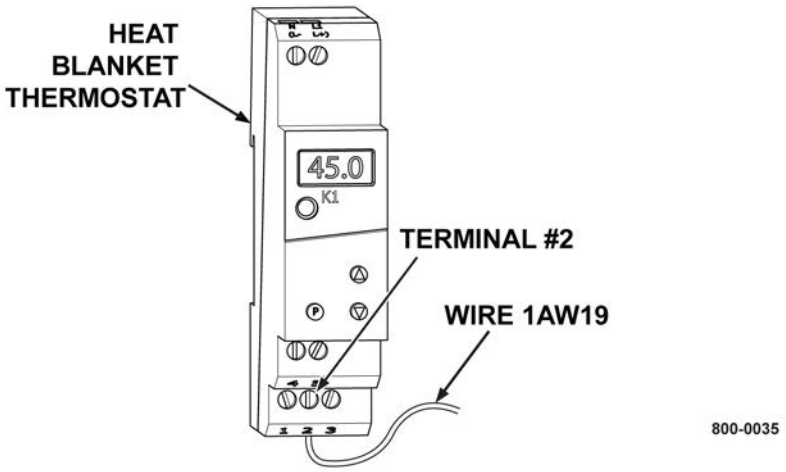


Figure 4. Voltage at Terminal #2.

13. Does voltage measure between 115-124 VAC?
    a. YES-Proceed to step 14.
    b. NO-Proceed to troubleshooting work package: Heat blanket thermostat inoperative (WP 0039).

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

14. Using a multi-meter, measure AC voltage between positive black wire 1AW19 (Figure 5) at terminal #5 (Figure 5) of heat blanket toggle switch (Figure 5) and a known ground.
15. Does voltage measure between 115-124 VAC?
    a. YES-Proceed to Malfunction: Heat blanket toggle switch inoperative.
    b. No-Proceed to Malfunction: Faulty wire 1AW19.

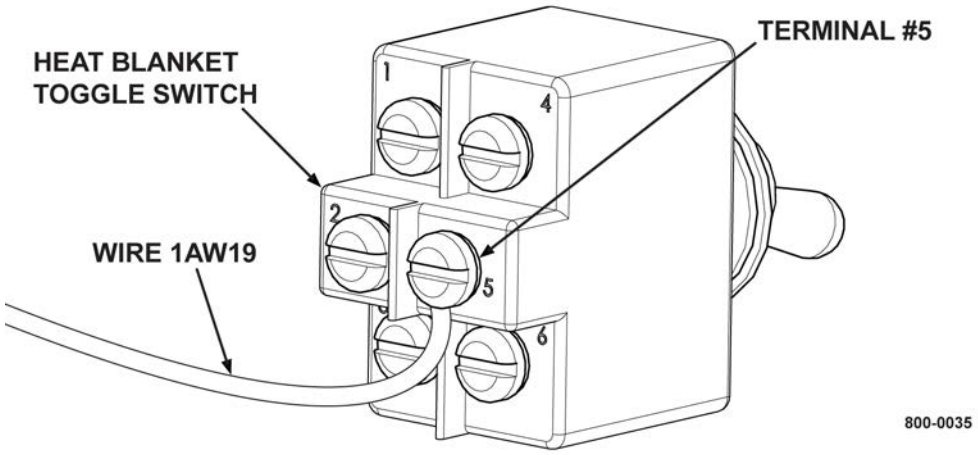


Figure 5. Voltage at Terminal #5.

MALFUNCTION

Faulty indicator light bulb.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Remove indicator light bulb (WP 0132).
3. Using a multi-meter, check continuity between base and terminal of bulb (Figure 6).

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

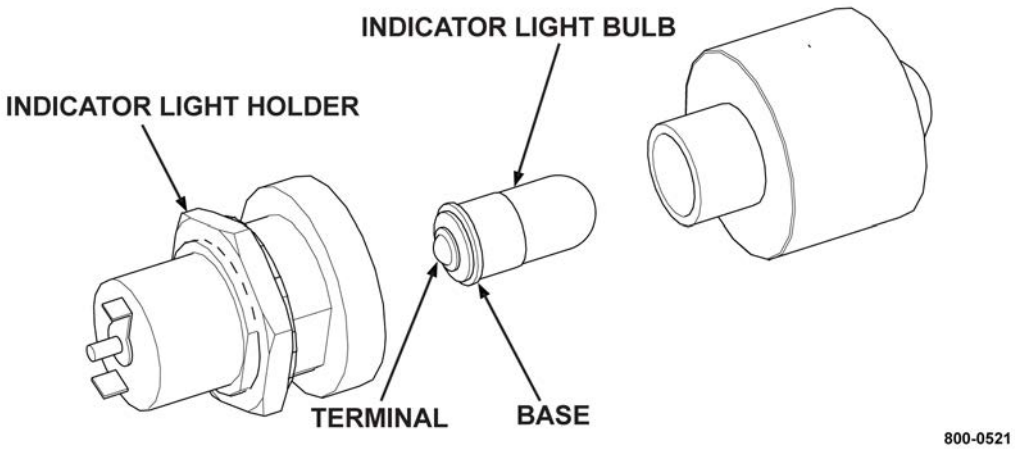


Figure 6. Bulb Terminals.

4. Is continuity present?
   a. YES-Proceed to Malfunction: Faulty indicator light holder.
   b. NO-Install new indicator light bulb (WP 0132).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty indicator light holder.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace indicator light holder (WP 0131).
3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

MALFUNCTION

Faulty wire 1AW19.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Replace wire 1AW19. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

MALFUNCTION

Heat blanket toggle switch inoperative.

CORRECTIVE ACTION

1. Ensure the heat blanket toggle switch (Figure 7) is ON.
2. Using a multi-meter, measure AC voltage at terminal #4 (Figure 7) of heat blanket toggle switch (Figure 7) and a known ground.

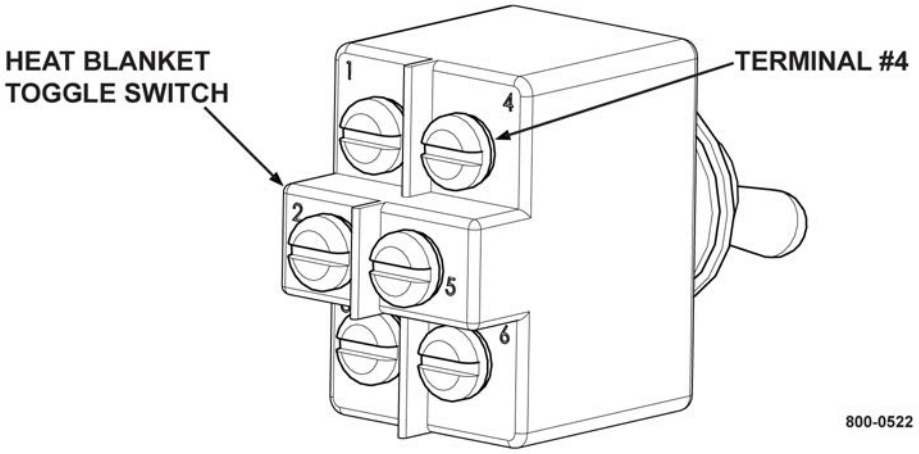


Figure 7. Voltage at Terminal #4 of Heat Blanket Toggle Switch.

3. Does voltage measure between 115-124 VAC?
   a. YES-Proceed to step 4.
   b. NO-Replace heat blanket toggle switch (WP 0123).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
4. Using a multi-meter, measure AC voltage at terminal A1 wire 1AW20 (Figure 8) of 4 pole contactor (Figure 8) and a known ground.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

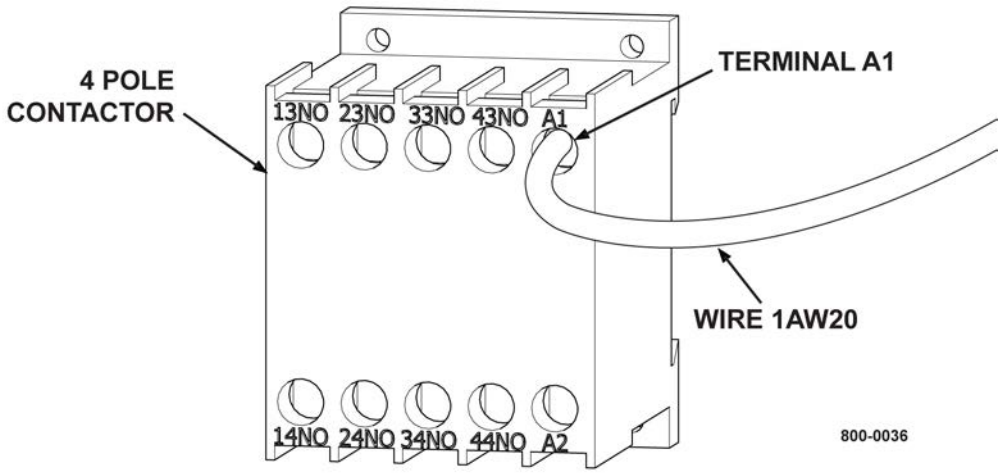


Figure 8. Voltage at Terminal A1 (wire 1AW20) of 4 Pole Contactor.

5. Does voltage measure between 115-124 VAC?
   a. YES-Proceed to Malfunction: 4 pole contactor inoperative.
   b. NO-Proceed to Malfunction: Faulty wire 1AW20.

MALFUNCTION

Faulty wire 1AW20.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace wire 1AW20 (Figure 8). Refer to electrical general maintenance instructions (WP 0152), replacing wires.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

MALFUNCTION

4 pole contactor inoperative.

CORRECTIVE ACTION

1. Using a multi-meter, measure the AC voltage at terminal #14 (Figure 9) of the 4 pole contactor (output side) and a known ground.
2. Using a multi-meter, measure the AC voltage at terminal #24 (Figure 9) of the 4 pole contactor (output side) and a known ground.
3. Using a multi-meter, measure the AC voltage at terminal #34 (Figure 9) of the 4 pole contactor (output side) and a known ground.
4. Using a multi-meter, measure the AC voltage at terminal #44 (Figure 9) of the 4 pole contactor (output side) and a known ground.
5. Does voltage measure between 115-124 VAC at each terminal?
   a. YES-Proceed to Malfunction: Heat blanket current sensor inoperative.
   b. NO-Refer to troubleshooting work package: 4 pole contactor inoperative (WP 0040).

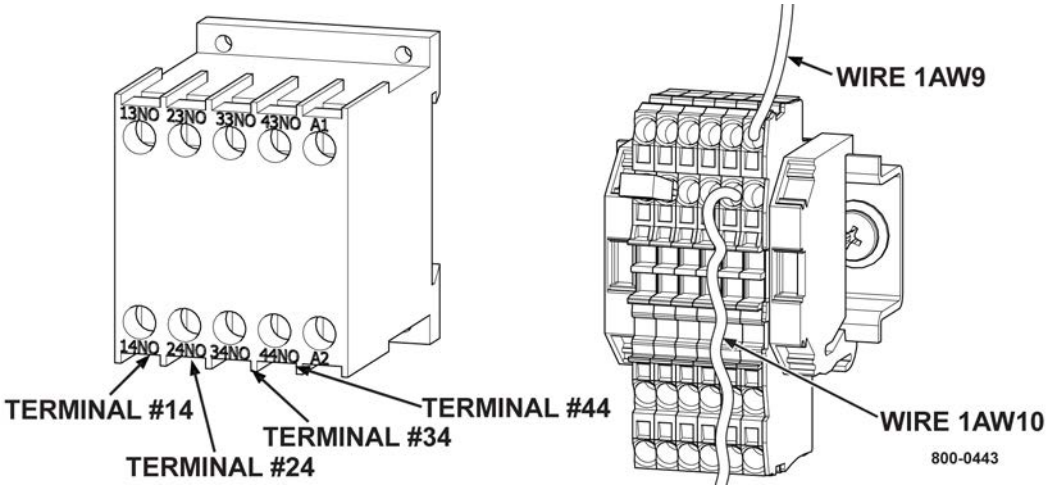


Figure 9. Voltage between Positive Orange Wire and Negative Purple Wire.

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

MALFUNCTION

Heat blanket current sensor inoperative.

CORRECTIVE ACTION

1. Using a multi-meter, measure DC voltage between positive orange wire 1AW10 (Figure 9) and purple negative wire 1AW9 (Figure 9).
2. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Step 3.
   b. NO-Replace blue terminal block (WP 0118).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
3. Using a multi-meter, measure DC voltage between positive blue wire 1AW22 at terminal # 2 (Figure 10) of the heat blanket toggle switch (Figure 10) and negative purple wire 1AW9 (Figure 10) at orange terminal block (Figure 10).

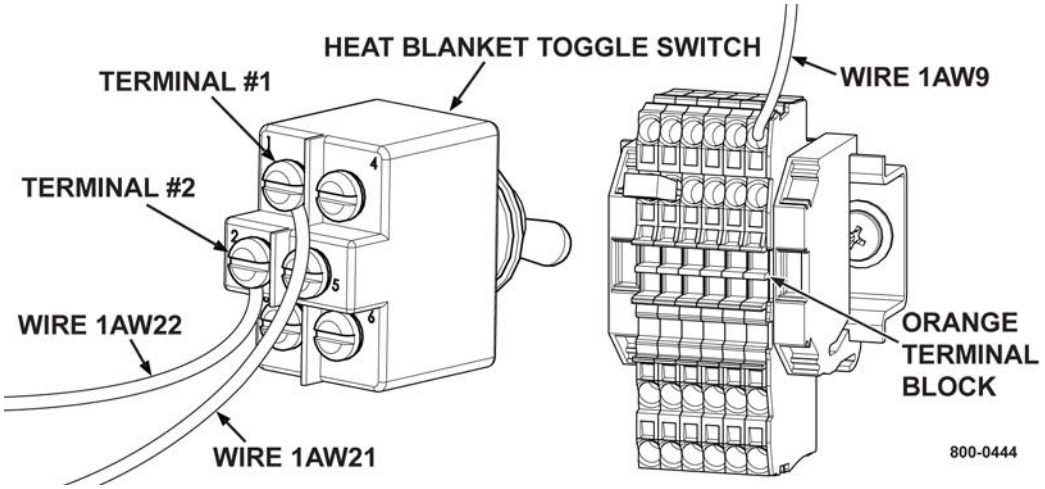


Figure 10. Terminal #1 and Terminal #2.

4. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to step 5.
   b. NO-Replace heat blanket current sensors (WP 0111).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
5. Using a multi-meter, measure DC voltage between positive blue wire 1AW21 at terminal #1 (Figure 10) of the heat blanket toggle switch (Figure 10) and negative purple wire 1AW9 at orange terminal block (Figure 10).

HEAT BLANKET INDICATOR LIGHT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

6. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty wire 1AW21.
   b. NO-Replace heat blanket toggle switch (WP 0123).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty wire 1AW21.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace wire 1AW21 (Figure 10). Refer to electrical general maintenance instructions (WP 0152), replacing wires.
3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL-HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Multi-meter (WP 0191, Table 1, Item 9)

Personnel Required
Two

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
Towing Vehicle Operator Manual
WP 0066

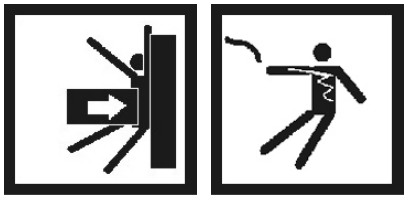
References (cont.)
WP 0067
WP 0068
WP 0069
WP 0124
WP 0131
WP 0132
WP 0152

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Coupled to Towing Vehicle (TM 9-2330-394-13&P)

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Camel II must be coupled to a prime mover, inter-vehicular harness connected and prime mover running lights on for the heat trace to have power in trailer mode.
- Power indicator light will not function in Trailer mode.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE

SYMPTOM

Heat trace indicator light inoperative.

MALFUNCTION

No power to heat trace indicator light.

CORRECTIVE ACTION

1. Open electrical control box lid (Figure 1).
2. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1) to electrical control box (Figure 1).
3. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

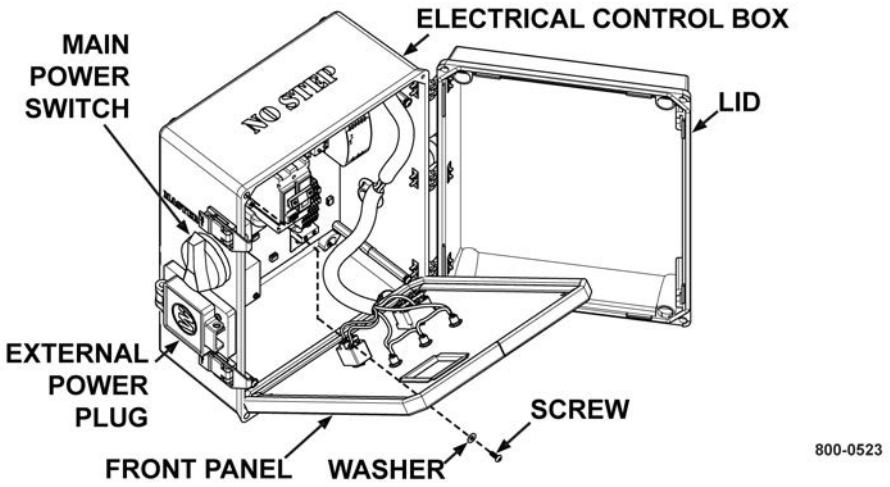


Figure 1. Electrical Control Box Front Panel Removal.

NOTE

- If trailer running lights do not operate, refer to TM-9-2330-394-13&P troubleshooting procedures.
- If towing vehicle running lights do not operate, refer to towing vehicle TM for troubleshooting procedures.

4. Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
5. Ensure heat trace toggle switch is in the UP, trailer mode position.
6. Using a multi-meter, measure DC voltage between positive blue wire 1AW25 (Figure 2) and negative purple wire 1AW26 (Figure 2) where they connect to the heat trace indicator light holder (Figure 2).

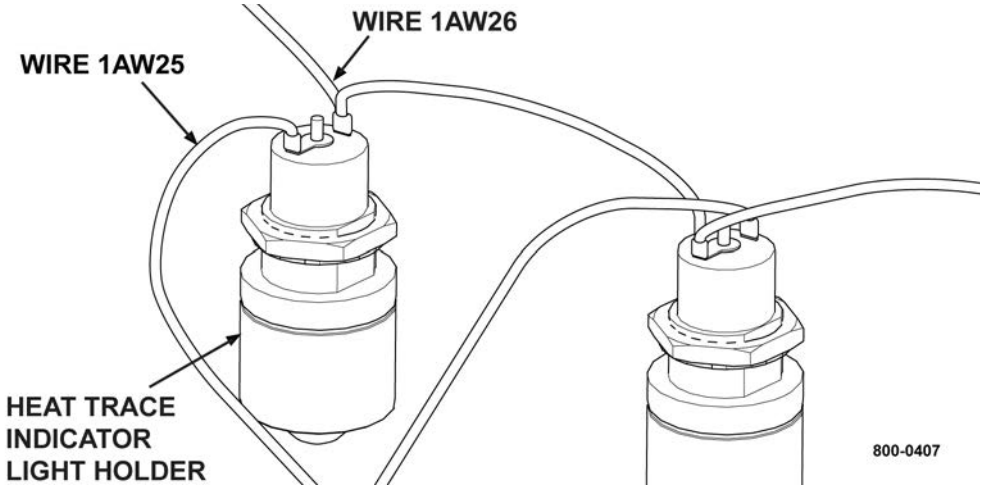


Figure 2. Heat Trace Indicator Light Holder.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

7. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty indicator light bulb.
   b. NO-Proceed to step 8.
8. Using a multi-meter, measure DC voltage between positive terminal #4 (Figure 3) of heat trace toggle switch (Figure 3) and electrical control box terminal ground lug (Figure 3).

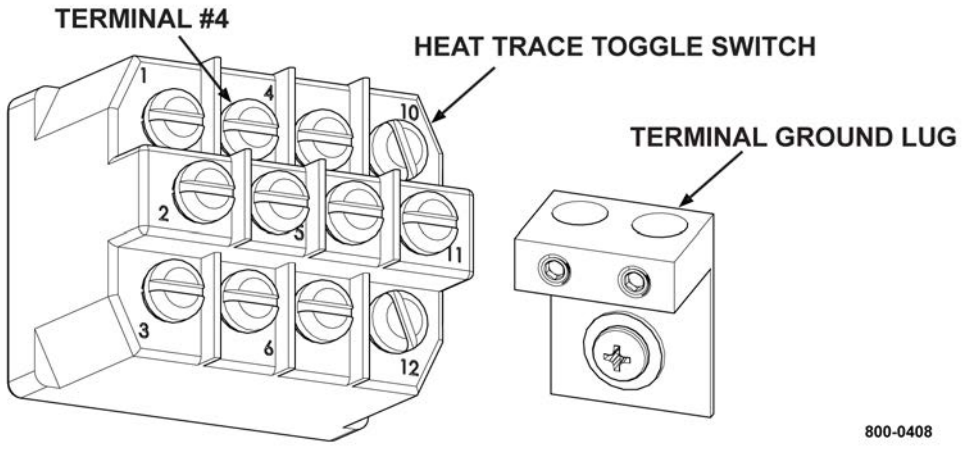


Figure 3. DC Voltage at Positive Terminal #4.

9. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Heat trace toggle switch inoperative.
   b. NO-Proceed to Malfunction: No power at voltage convertor box.

MALFUNCTION

Faulty indicator light bulb.

CORRECTIVE ACTION

1. Disconnect inter-vehicular harness.
2. Remove indicator light bulb (WP 0132).
3. Using a multi-meter, check for continuity between base (Figure 4) and terminal (Figure 4) of indicator light bulb (Figure 4).
4. Is continuity present?

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

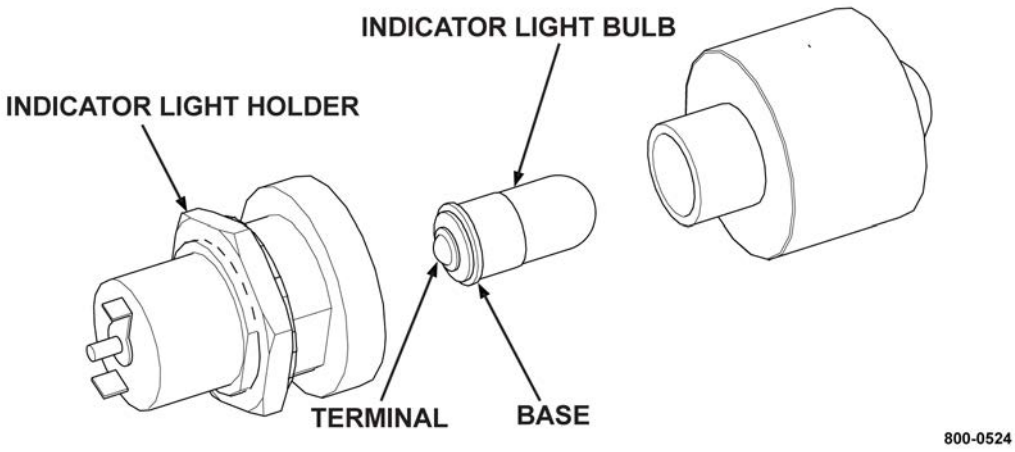


Figure 4. Bulb Terminals.

a. YES-Proceed to Malfunction: Faulty indicator light holder.

b. NO-Install new indicator light bulb (WP 0132).

(1) Connect inter-vehicular harness.

(2) Verify that component operates correctly.

(3) Install all removed components.

MALFUNCTION

Faulty indicator light holder.

CORRECTIVE ACTION

1. Replace indicator light holder (WP 0131).
2. Connect inter-vehicular harness.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

3. Verify that component operates correctly.
4. Install all removed components.

MALFUNCTION

Heat trace toggle switch inoperative.

CORRECTIVE ACTION

1. Using a multi-meter, measure DC voltage between positive terminal #5 (Figure 5) of heat trace toggle switch (Figure 5) and electrical control box terminal ground lug (Figure 5).

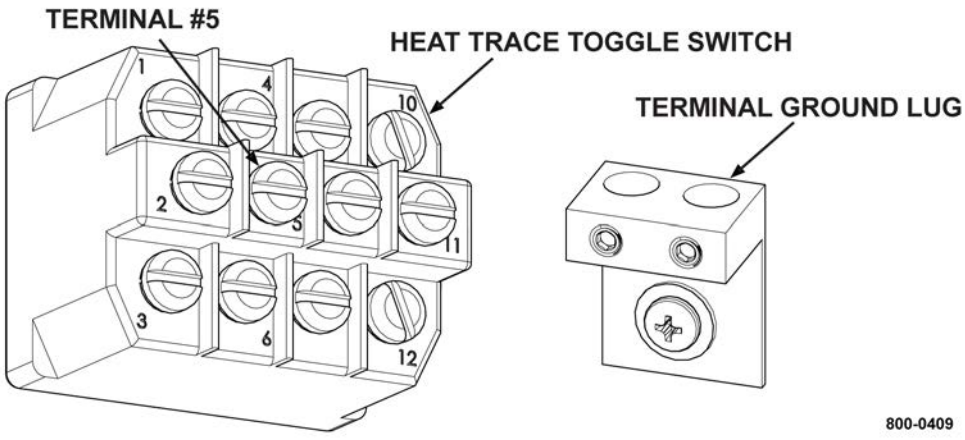


Figure 5. DC Voltage at Positive Terminal #5.

2. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty wire.
   b. NO-Replace heat trace toggle switch (WP 0124).
      (1) Connect inter-vehicular harness.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

No power at converter Box.

CORRECTIVE ACTION

1. Loosen two screws and disconnect latches (Figure 6) on voltage converter box (Figure 6) located on front of trailer.
2. Open cover on voltage converter box (Figure 6).

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

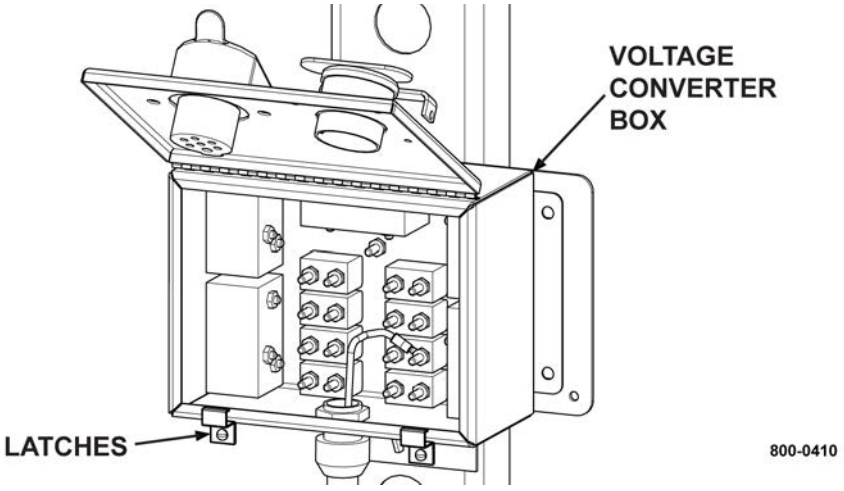


Figure 6. Disconnect Latches.

3. Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
4. Using a multi-meter, measure DC voltage between circuit breaker #7 roadside pin (Figure 7) and the ground lug (Figure 7).

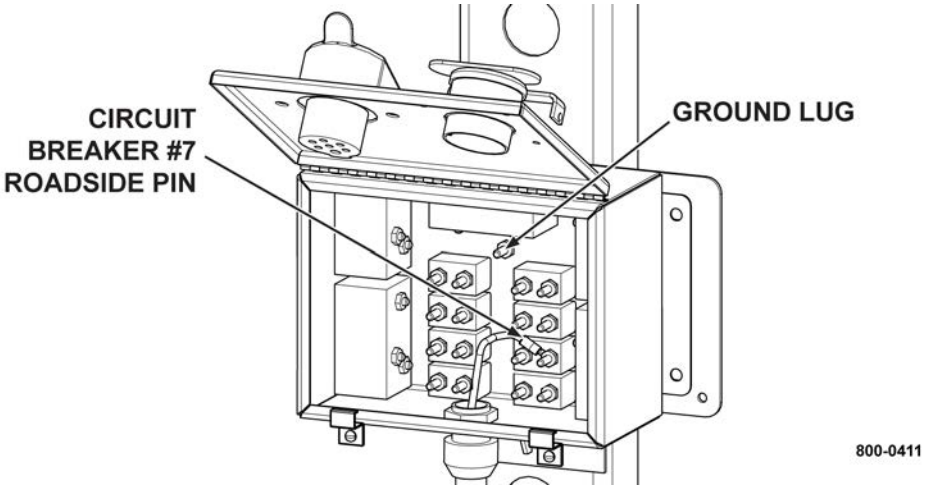


Figure 7. DC Voltage at Circuit Breaker #7 Roadside Pin.

5. Does voltage measure between 11-15 VDC?
   a. YES-Proceed to Malfunction: Inoperative fuse.
   b. NO-Refer to TM 9-2330-394-13&P for converter box troubleshooting procedures.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

MALFUNCTION

Faulty wire.

CORRECTIVE ACTION

1. Turn off lights and master power of prime mover.
2. Disconnect inter-vehicular harness.
3. Using a multi-meter, check for continuity between each end of blue wire 1AW32 (Figure 8) between the heat trace toggle switch (Figure 8) and heat trace current sensor (Figure 8).
4. Using a multi-meter, check for continuity between each end of blue wire 1AW25 (Figure 8) between the heat trace indicator light (Figure 8) and heat trace current sensor (Figure 8).

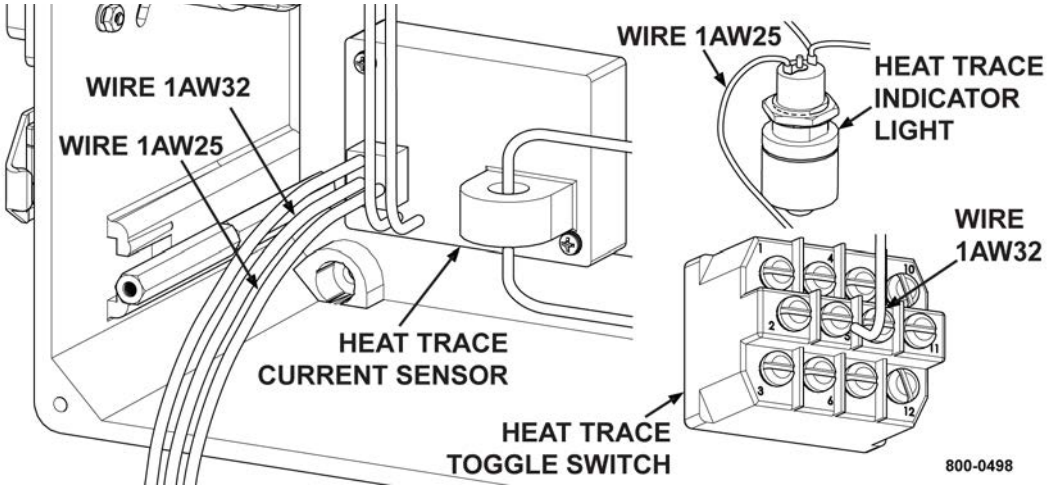


Figure 8. Continuity at Ends of Wire IAW32 and IAW25.

5. Is continuity present on each wire?
   a. YES-Restart troubleshooting procedure step 1.
   b. NO-Replace faulty wire, refer to electrical general maintenance (WP 0152), replacing wires.
      (1) Connect inter-vehicular harness.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Inoperative fuse.

CORRECTIVE ACTION

1. Turn off power and disconnect inter-vehicular harness.
2. Locate fuse link (Figure 9) underneath trailer deck at front of trailer.
3. Remove environmental cap (Figure 9) from fuse link (Figure 9).

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

4. Remove 4 amp fuse (Figure 9) from fuse link (Figure 9).
5. Using a multi-meter, check for continuity between each end of the fuse (Figure 9).

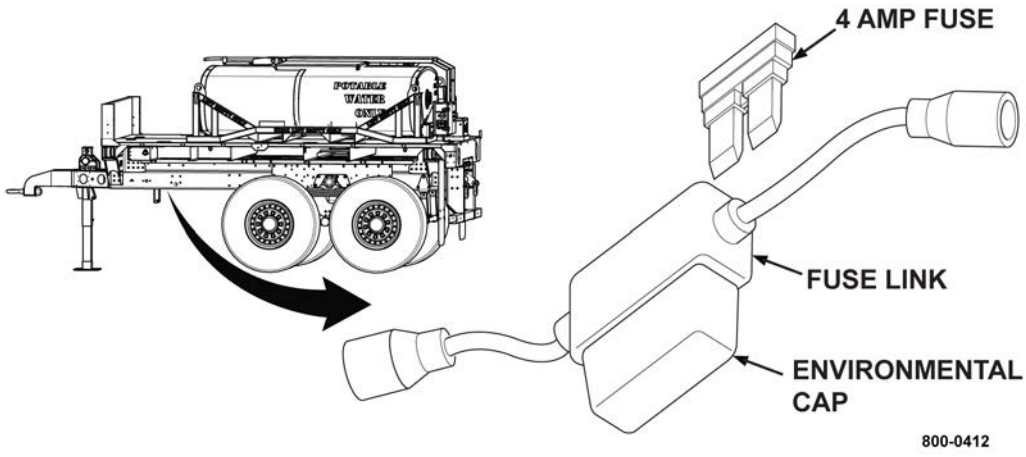


Figure 9. Continuity at Ends of Fuse.

6. Is continuity present?
   a. YES-Re-install fuse. Proceed to Malfunction: Faulty power wire.
   b. NO-Replace inoperative fuse (WP 0069).
      (1) Connect inter-vehicular harness.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

(2) Verify that component operates correctly.

(3) Install all removed components.

MALFUNCTION

Faulty power wire.

CORRECTIVE ACTION

1. Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
2. Locate power wire 2AW1 (Figure 10) underneath trailer deck where it attaches to fuse link (Figure 10), disconnect plug connector (Figure 10).
3. Using a multi-meter, check for DC voltage at end of wire 2AW1 (Figure 10) where it plugs into fuse link (Figure 10) and a known ground.

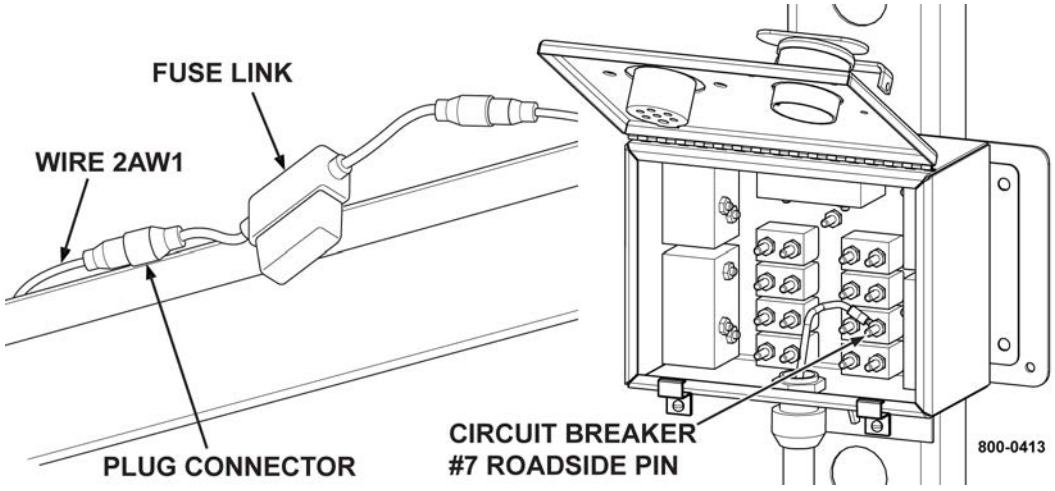


Figure 10. Voltage at Ends of Wire 2AW1.

4. Is DC voltage between 11-15 VDC?
   a. YES-Reconnect plug connector, proceed to step 5.
   b. NO-Replace wiring harness, convertor to fuse link wire (WP 0067).
      (1) Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
5. Disconnect plug connector (Figure 10) from opposite side of fuse link, tested in step 4.
6. Using a multi-meter, measure DC voltage at end of fuse link.

HEAT TRACE INDICATOR LIGHT (TRAILER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

7. Is DC voltage between 11-15 VDC?
   a. YES-Replace wiring harness, fuse link to electrical junction wiring (WP 0068).
      (1) Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
   b. NO-Replace wiring fuse link (WP 0069).
      (1) Ensure inter-vehicular harness is connected and towing vehicle running lights are ON.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL - HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

Materials/Parts
- Heat Shrink Tubing, 3/16 in. Dia. (WP 0190, Table 1, Item 8)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0031

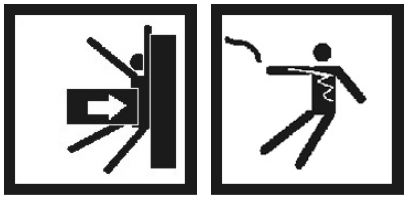
References (cont.)
- WP 0053
- WP 0074
- WP 0112
- WP 0124
- WP 0131
- WP 0132
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Camel II must be coupled to a prime mover, inter-vehicular harness connected, and prime mover running lights on for the heat trace to have power in trailer mode.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE

SYMPTOM

Heat trace indicator light inoperative.

MALFUNCTION

No power to heat trace indicator light.

CORRECTIVE ACTION

1. Turn main power switch (Figure 1) to OFF position and disconnect power cord (Figure 1) from external power plug (Figure 1) on electrical control box (Figure 1).
2. Open electrical control box lid (Figure 1).
3. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1) to electrical control box (Figure 1).
4. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

5. Ensure Ground Fault Circuit Interrupter (GFCI) breaker bar is reset (WP 0053) and in the UP position.
6. Ensure main power switch (Figure 1) is ON.
7. Connect power cord (Figure 1) to external power plug (Figure 1), turn main power switch (Figure 1) to ON position.

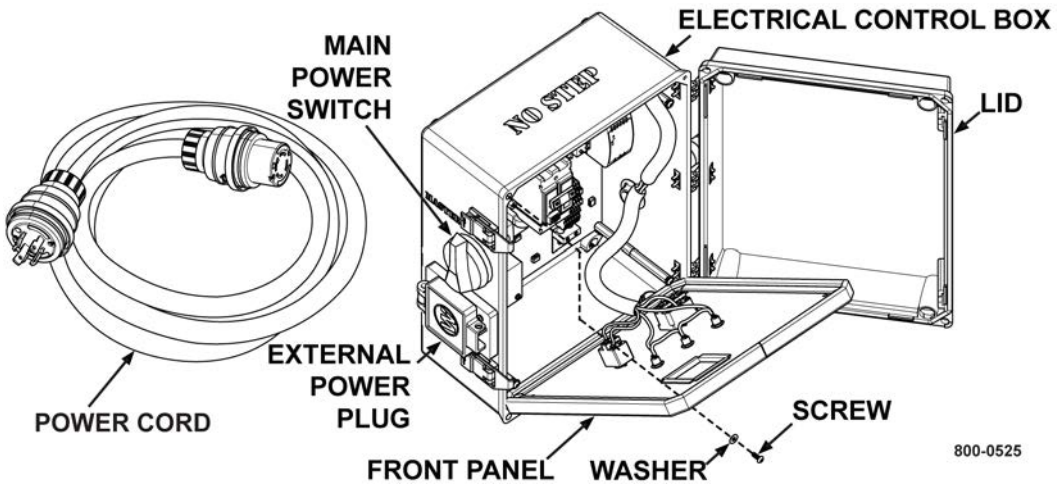


Figure 1. Electrical Control Box Front Panel Removal.

8. Ensure the heat trace toggle switch (Figure 1) is in the down, ON position.
9. Using a multi-meter, measure DC voltage between positive blue wire 1AW25 (Figure 2) and negative purple wire 1AW26 (Figure 2) where they connect to the heat trace indicator light holder (Figure 2).

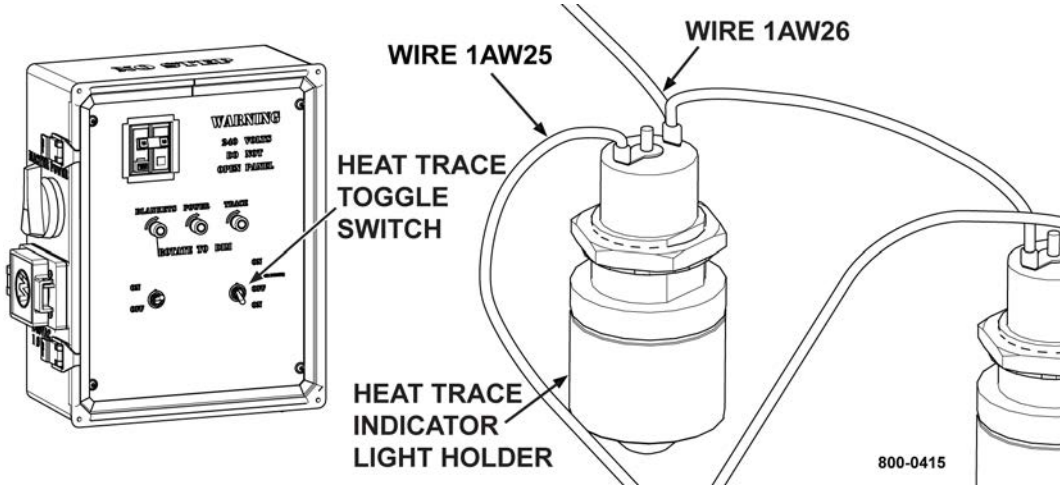


Figure 2. Heat Trace Indicator Light Holder.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

10. Does voltage measure between 8-12 VDC?
    a. YES-Proceed to Malfunction: Faulty indicator light bulb.
    b. NO-Proceed to step 11.
11. Using a multi-meter, measure DC voltage between positive blue wire 1AW25 (Figure 3) at heat trace current sensor (Figure 3) and negative purple wire 1AW26 (Figure 3) at orange terminal block (Figure 3).

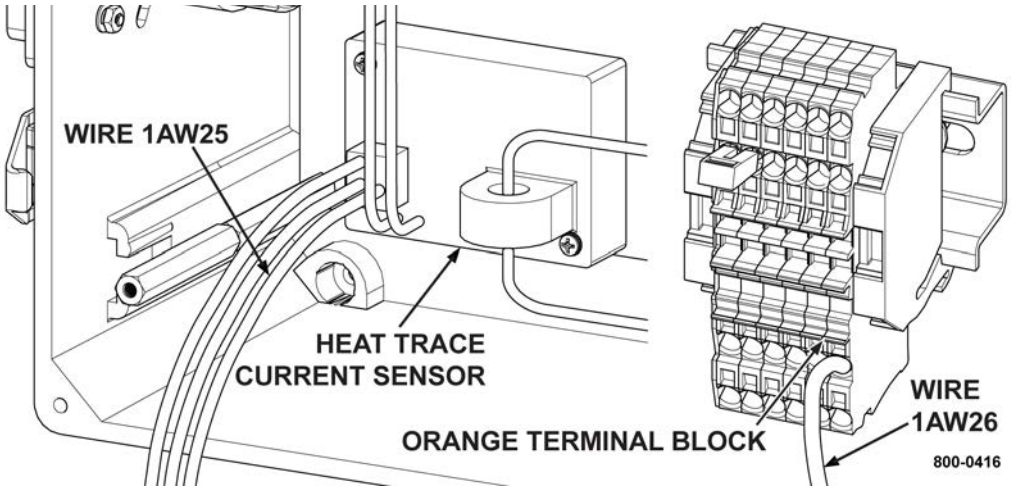


Figure 3. DC Voltage at Heat Trace Current Sensor Wire 1AW25.

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12. Does voltage measure between 8-12 VDC?
    a. YES- Proceed to Malfunction: Faulty wire 1AW25.
    b. NO-Proceed to Malfunction: Heat trace current sensor inoperative.

MALFUNCTION

Faulty indicator light bulb.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Remove indicator light bulb (WP 0132).
3. Using a multi-meter, check for continuity between base (Figure 4) and terminal (Figure 4) of indicator light bulb (Figure 4).

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

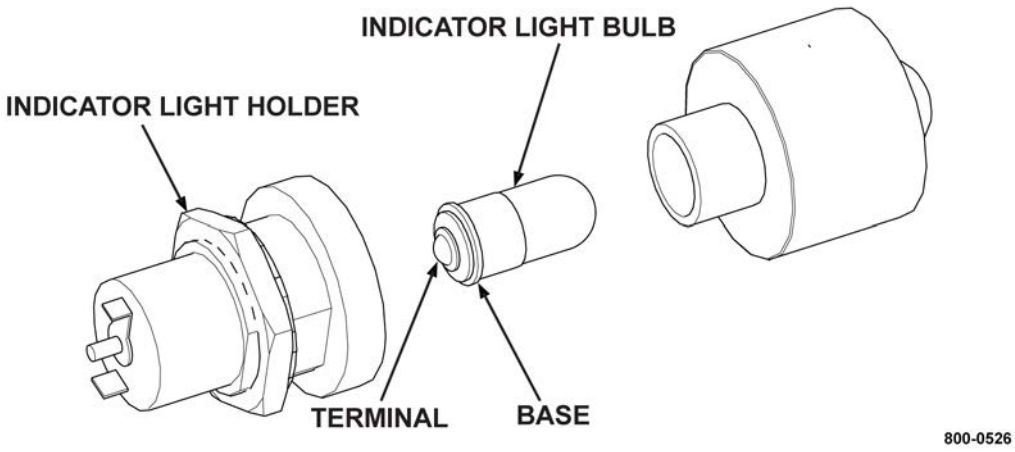


Figure 4. Bulb Terminal.

4. Is continuity present?
   a. YES-Proceed to Malfunction: Faulty indicator light holder.
   b. NO-Install new indicator light bulb indicator light bulb (WP 0132).
      (1) Install all removed components.
      (2) Connect power cord to external power plug, turn main power switch to ON position.
      (3) Verify that component operates correctly.

MALFUNCTION

Faulty indicator light holder.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace indicator light holder (WP 0131).
3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

MALFUNCTION

Faulty wire 1AW25.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Replace blue wire 1AW25 between heat trace current sensor (Figure 3) and heat trace indicator light holder (Figure 4). Refer to electrical general maintenance instructions (WP 0152), replacing wires.
3. Connect power cord to external power plug, turn main power switch to ON position.
4. Verify that component operates correctly.
5. Install all removed components.

MALFUNCTION

Heat trace current sensor inoperative.

CORRECTIVE ACTION

1. Using a multi-meter, measure DC voltage between positive blue wire 1AW28 (Figure 5) at heat trace current sensor (Figure 5) and negative purple wire 1AW26 (Figure 5) at orange terminal block (Figure 5).

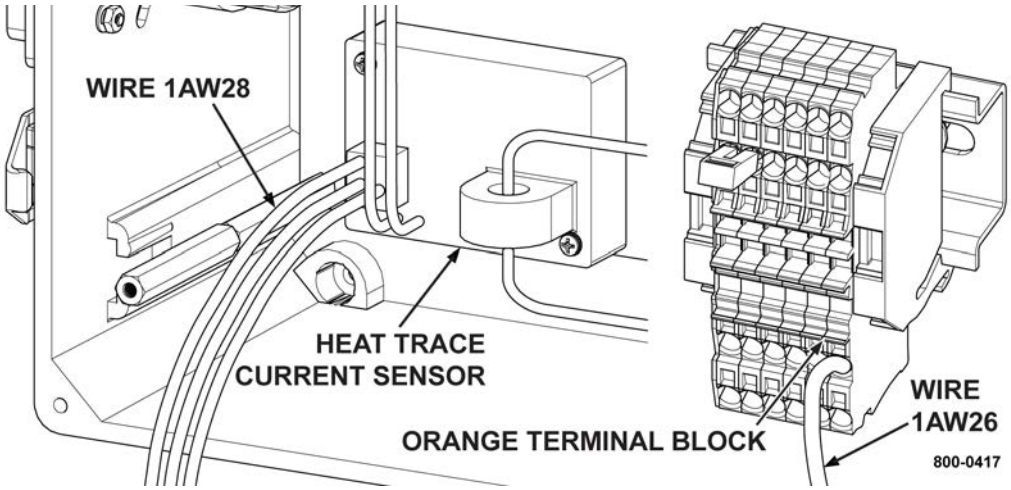


Figure 5. DC Voltage at Heat Trace Current Sensor, Wire 1AW28.

2. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to step 3.
   b. NO-Proceed to Malfunction: Heat trace toggle switch inoperative.
3. Using a multi-meter, measure AC voltage between positive black wire 1EW6 (Figure 6) and white neutral wire 1EW7 (Figure 6) at heat trace current sensor (Figure 6).

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

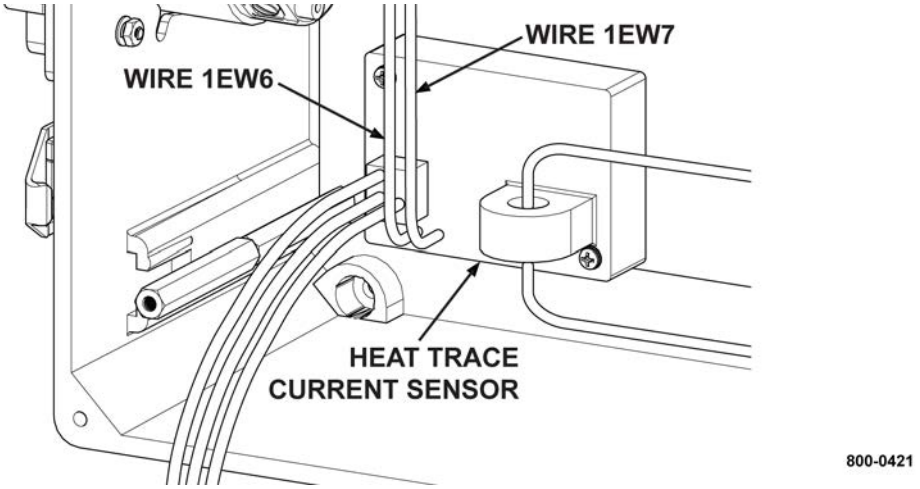


Figure 6. AC Voltage at Black Positive Wire 1EW6.

4. Does voltage measure between 115-124 VAC?
   a. YES-Proceed to Malfunction: Heat trace inoperative.
   b. NO-Proceed to step 5.
5. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
6. Using a multi-meter, check for continuity at each end of black wire 1EW6 (Figure 7) between black terminal block (Figure 7) and heat trace current sensor (Figure 7).

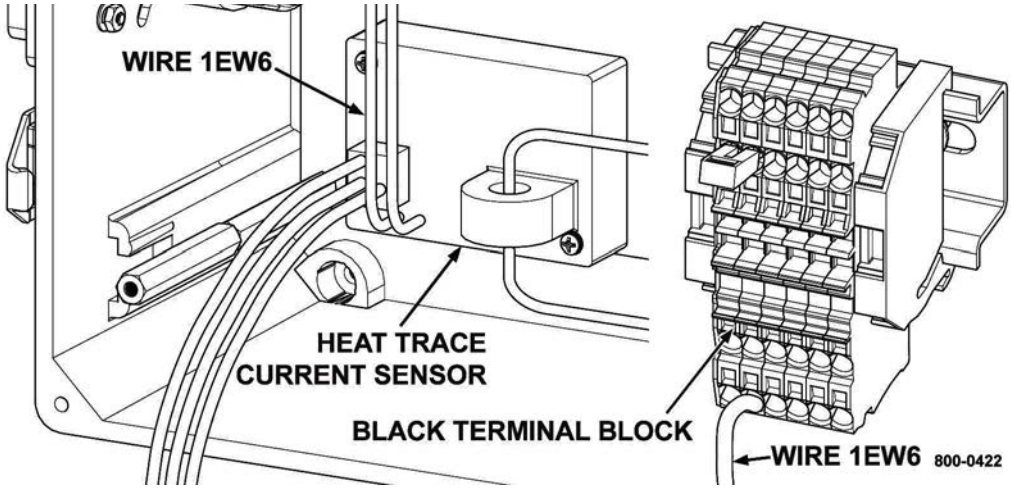


Figure 7. Continuity at Black Wire Ends.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

7. Is continuity present?
   a. YES-Proceed to step 8.
   b. NO-Replace the faulty wire 1EW6.
8. Using a multi-meter, check for continuity at each end of white wire 1EW7 (Figure 8) between the heat trace current sensor (Figure 8) and neutral terminal block (Figure 8).

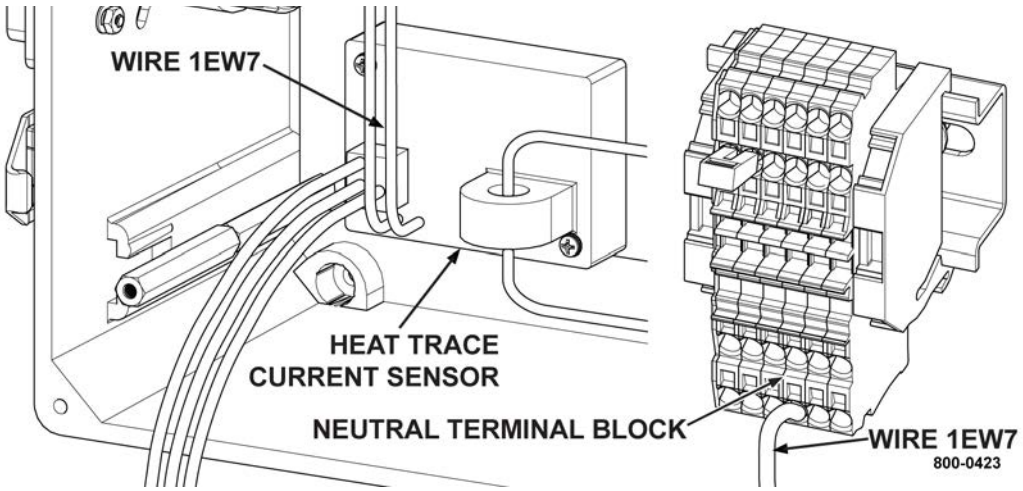


Figure 8. Continuity at White Wire Ends.

9. Is continuity present?
   a. YES-Replace heat trace current sensor (WP 0112).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
   b. NO-Replace the faulty wire 1EW7. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Heat trace toggle switch inoperative.

CORRECTIVE ACTION

1. Using a multi-meter, measure DC voltage between terminal #3 (Figure 9), heat trace toggle switch (Figure 9) and negative purple wire 1AW26 (Figure 9) at orange terminal block (Figure 9).

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

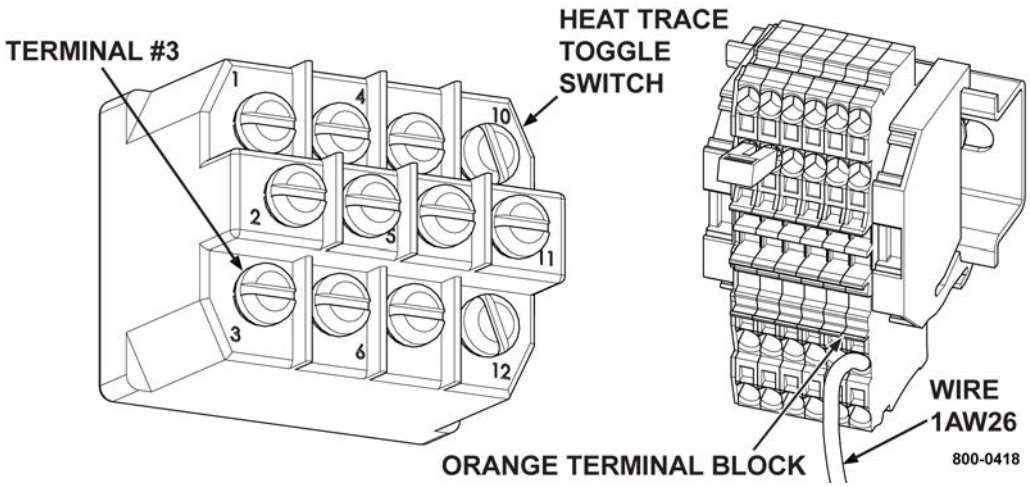


Figure 9. DC Voltage at Terminal #3.

2. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty wire 1AW28.
   b. NO-Proceed to step 3.
3. Using a multi-meter, measure DC voltage between terminal #2 (Figure 10) of heat trace toggle switch (Figure 10) and negative purple wire 1AW26 (Figure 10) at orange terminal block (Figure 10).

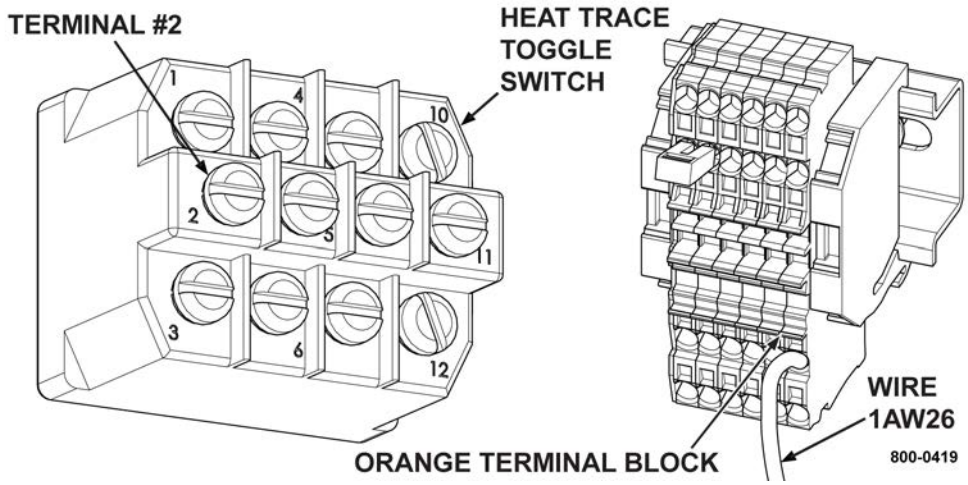


Figure 10. DC Voltage at Terminal #2.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

4. Does voltage measure between 8-12 VDC?
   a. YES-Replace heat trace toggle switch (WP 0124).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
   b. NO-Proceed to step 5.
5. Using a multi-meter, measure DC voltage between positive blue wire 1AW24 (Figure 11) at blue terminal block (Figure 11) and negative purple wire 1AW26 (Figure 11) at orange terminal block (Figure 11).

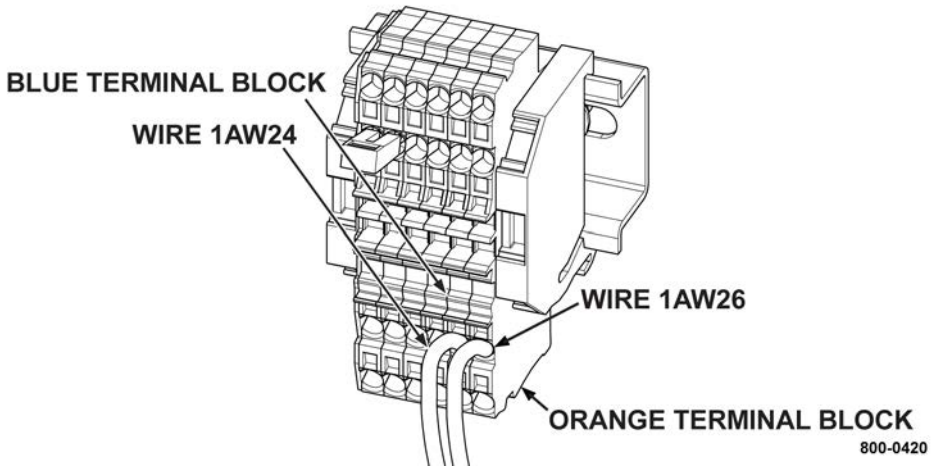


Figure 11. DC Voltage at Positive Blue Wire 1AW24.

6. Does voltage measure between 8-12 VDC?
   a. YES-Proceed to Malfunction: Faulty wire 1AW24.

NOTE

If there is no voltage on blue wire 1AW24 at the blue terminal block the power light should also be inoperative.

   b. NO-Refer to troubleshooting work package power indicator light (WP 0031).

MALFUNCTION

Heat trace inoperative.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Using a multi-meter, check for resistance between terminal #3 (Figure 12), heat trace toggle switch (Figure 12) and black wire 1EW2 (Figure 12) at orange terminal block (Figure 12).

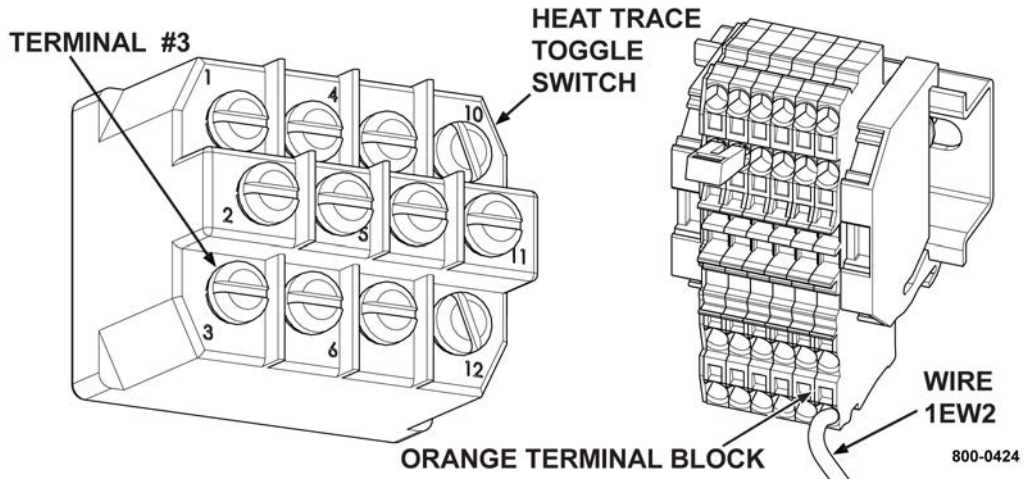


Figure 12. Resistance at Terminal #3.

3. Is resistance between 2 and 12 ohms?
   a. YES-Proceed to step 4.
   b. NO-Replace water tank assembly (WP 0074).
4. Using a multi-meter, check for continuity between terminal #3 (Figure 12) of heat trace toggle switch (Figure 12) and a known ground.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

5. Is continuity present?
   a. YES-Replace water tank assembly (WP 0074)
   b. NO-Replace heat trace current sensor (WP 0112).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty wire 1AW28.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace blue wire 1AW28 (Figure 13) between heat trace toggle switch terminal #3 (Figure 13) and heat trace current sensor (Figure 13). Refer to electrical general maintenance instructions (WP 0152), replacing wires.
3. Connect power cord to external power plug, turn main power switch to ON position.

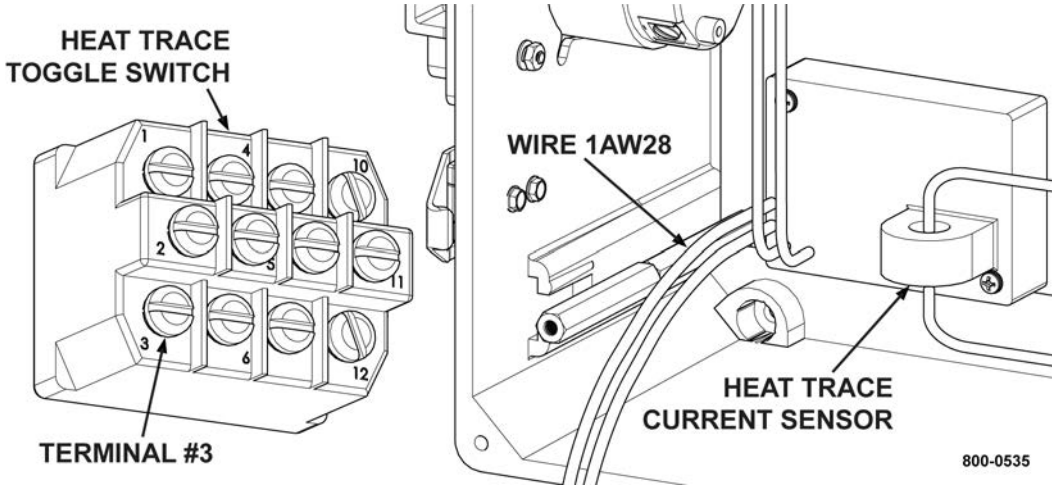


Figure 13. Blue Wire 1AW28 Replacement.

4. Verify that component operates correctly.
5. Install all removed components.

HEAT TRACE INDICATOR LIGHT (240 VAC SINGLE PHASE POWER MODE) INOPERATIVE - Continued

MALFUNCTION

Faulty wire 1AW24.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Replace blue wire 1AW24 (Figure 14) between heat trace toggle switch terminal #2 (Figure 14) and blue terminal block (Figure 14). Refer to electrical general maintenance instructions (WP 0152), replacing wires.
3. Connect power cord to external power plug, turn main power switch to ON position.

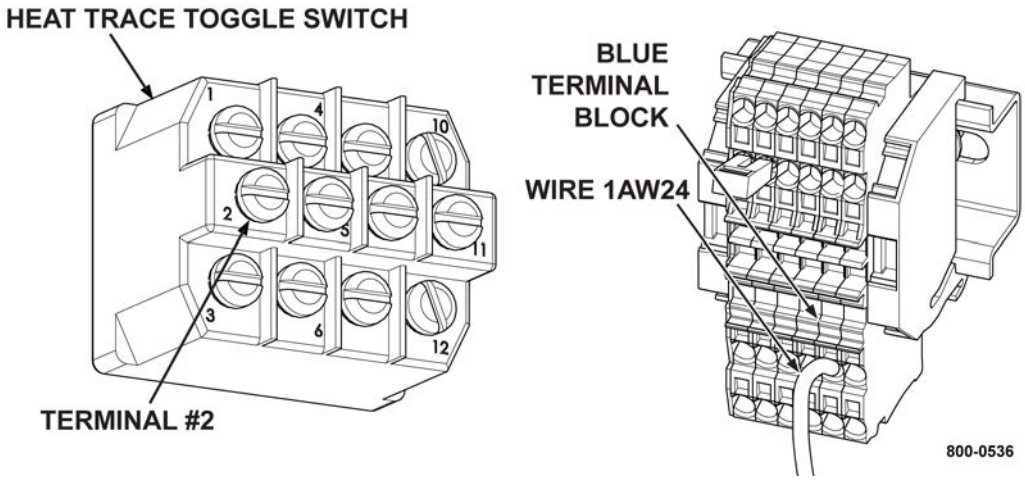


Figure 14. Blue Wire 1AW24 Replacement.

4. Verify that component operates correctly.
5. Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL - HEAT BLANKET INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Multi-meter (WP 0191, Table 1, Item 9)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)

References (cont.)
WP 0032
WP 0074

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT BLANKET INOPERATIVE

SYMPTOM

Heat blanket inoperative.

MALFUNCTION

Short or open heat blanket.

CORRECTIVE ACTION

NOTE

Complete troubleshooting work package heat blanket indicator light inoperative (WP 0032) prior to starting this work package. If no fault found in WP 0032, proceed to step 1.

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check for resistance between terminal #14 (Figure 1) and terminal #24 (Figure 1) of the 4 pole contactor (Figure 1).
3. Is resistance between 60-100 ohms?

HEAT BLANKET INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

a. YES-Proceed to step 4.

b. NO-Replace water tank assembly (WP 0074).

4. Using a multi-meter, check for resistance between terminal #34 (Figure 1) and terminal #44 (Figure 1) of the 4 pole contactor (Figure 1).

5. Is resistance between 60-100 ohms?

a. YES-Proceed to step 6.

b. NO-Replace water tank assembly (WP 0074).

6. Using a multi-meter, check for continuity between terminal #14 (Figure 1) of 4 pole contactor (Figure 1) and the electrical control box terminal ground lug (Figure 1).

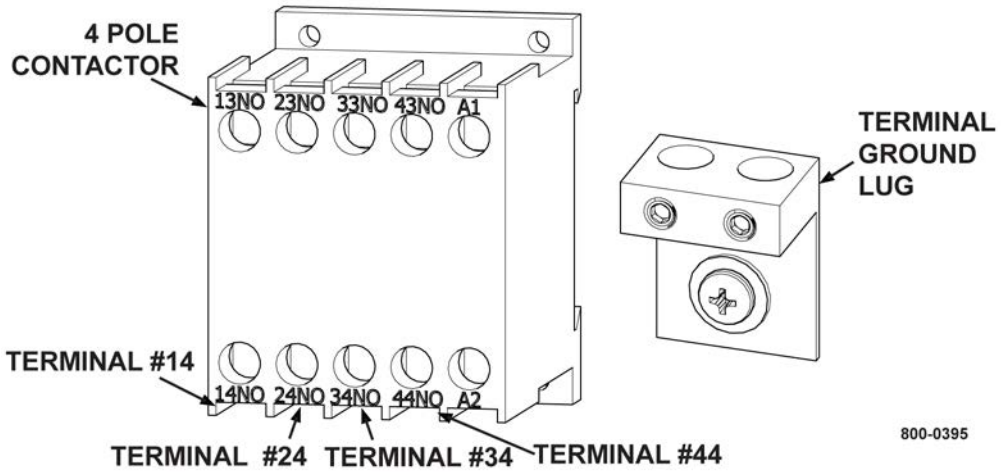


Figure 1. 4 Pole Contactor.

7. Is continuity present?

a. YES-Replace water tank assembly (WP 0074).

b. NO-Heat blanket is in working order.

Install removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL-HEAT TRACE INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Multi-meter (WP 0191, Table 1, Item 9)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)

References (cont.)
Electrical Wiring Schematic (FO-3)
WP 0138

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT TRACE INOPERATIVE

SYMPTOM

Heat trace inoperative.

MALFUNCTION

Short or open heat trace wire.

CORRECTIVE ACTION

1. Turn main power switch (Figure 1) to OFF position and disconnect power cord (Figure 1) from external power plug (Figure 1) on electrical control box (Figure 1).
2. Open electrical control box lid (Figure 1).
3. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1). Remove electrical control box front panel from electrical control box, set aside, leaving all wiring connections intact.

HEAT TRACE INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

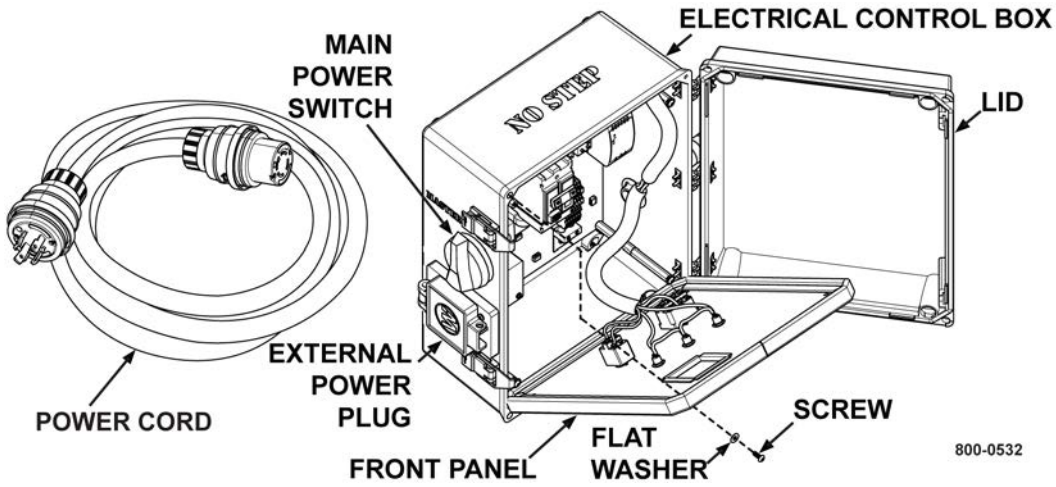


Figure 1. Electrical Control Box Front Panel Removal.

4. Using a multi-meter, check for resistance between terminal # 3 (Figure 2), heat trace toggle switch (Figure 2), and black wire 1EW2 (Figure 2) at orange terminal block (Figure 2).
5. Is resistance between 2 and 12 ohms?
   a. YES-Proceed to step 6.
   b. NO-Replace heat trace (WP 0138).
6. Using a multi-meter, check for continuity between terminal # 3 (Figure 2) of the heat trace toggle switch (Figure 2) and a known ground.

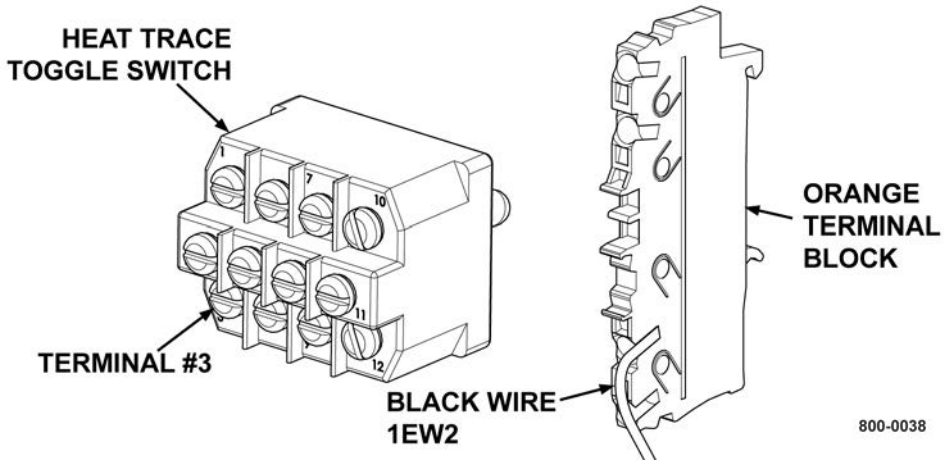


Figure 2. Heat Trace and Orange Terminal Block.

HEAT TRACE INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

7. Is continuity present?
   a. YES-Replace heat trace (WP 0138).
   b. NO-Heat trace is in working order.

      Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL-12 VDC POWER SUPPLY INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0038
- WP 0053

References (cont.)
- WP 0117
- WP 0118
- WP 0119
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- The 12 VDC power supply will only function when there is a working 240 VAC single phase external power source connected to the electrical control box and main power switch is ON.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

12 VDC POWER SUPPLY INOPERATIVE

SYMPTOM

No power at (outputs).

MALFUNCTION

12 VDC power supply inoperative.

CORRECTIVE ACTION

1. Test and reset Ground Fault Circuit Interrupter (GFCI) (WP 0053).
2. Turn main power switch (Figure 1) to OFF position and disconnect power cord (Figure 1) from external power plug (Figure 1) on electrical control box (Figure 1).
3. Open electrical control box lid (Figure 1).
4. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electric control box front panel (Figure 1) to electrical control box (Figure 1).

12 VDC POWER SUPPLY INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

5. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).

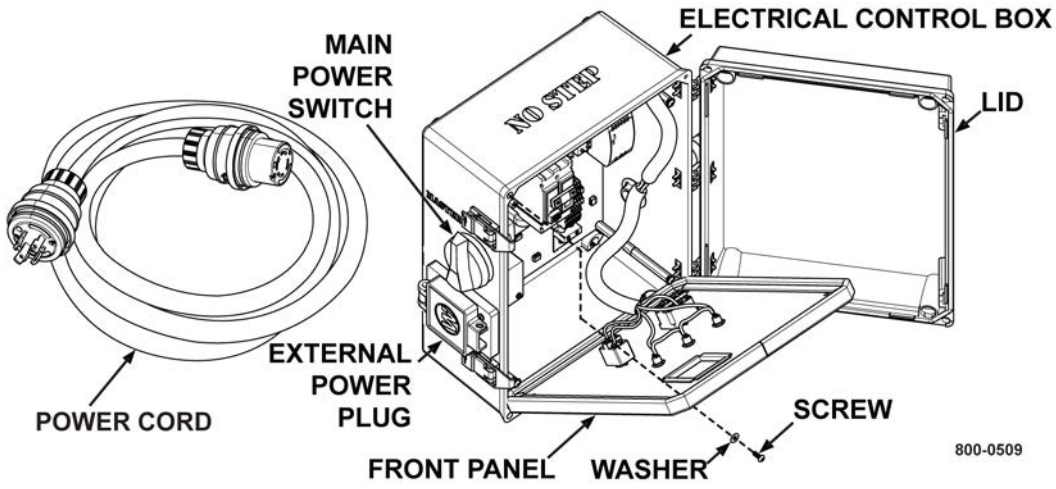


Figure 1. Electrical Control Box Front Panel Removal.

6. Connect power cord (Figure 1) to external power plug (Figure 1) on electrical control box (Figure 1).
7. Ensure main power switch (Figure 1) is ON.
8. Using a multi-meter, measure AC voltage at 12 VDC power supply positive input terminal (L) (Figure 2) and a known ground.
9. Using a multi-meter, measure AC voltage at 12 VDC power supply positive input terminal (N) (Figure 2) and a known ground.

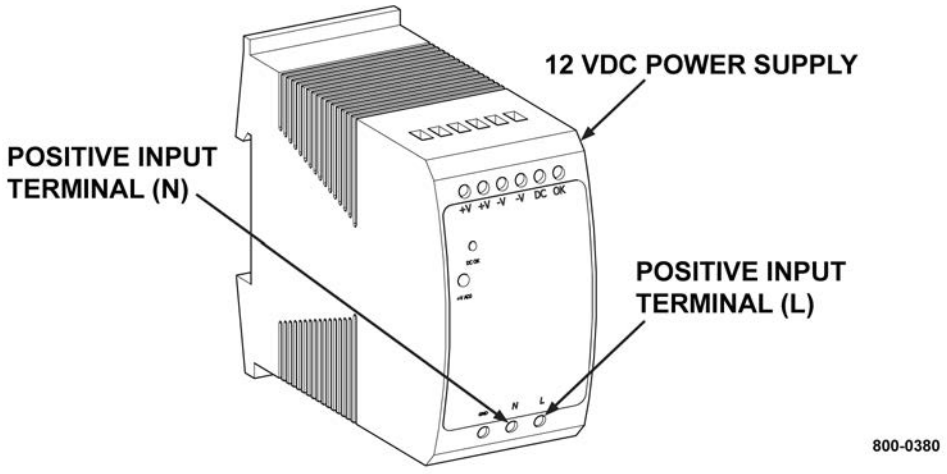


Figure 2. 12 VDC Power Supply.

12 VDC POWER SUPPLY INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

10. Is voltage between 115-124 VAC on each terminal?
    a. YES-Replace 12 VDC power supply (WP 0117).
        (1) Connect power cord to external power plug, turn main power switch to ON position.
        (2) Verify that component operates correctly.
        (3) Install all removed components.
    b. NO-Proceed to step 11.
11. Using a multi-meter, measure AC voltage at Ground Fault Circuit Interrupter (GFCI) circuit breaker terminal #3 (Figure 3) and a known ground.
12. Is voltage between 115-124 VAC?
    a. YES-Proceed to step 13.
    b. NO-Proceed to troubleshooting work package: GFCI breaker inoperative (WP 0038).
13. Using a multi-meter, measure AC voltage at GFCI circuit breaker terminal #4 (Figure 3) and a known ground.

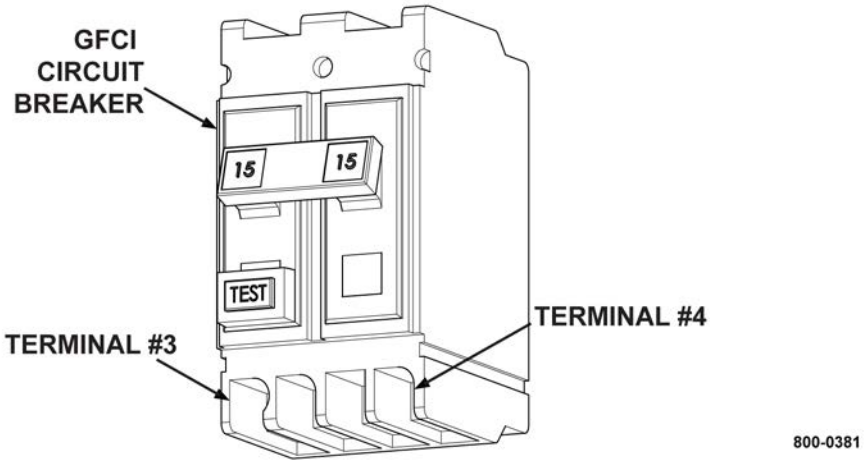


Figure 3. Breaker Outputs 3 and 4.

12 VDC POWER SUPPLY INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

14. Is voltage between 115-124 VAC?
    a. YES-Proceed to malfunction: Faulty wiring.
    b. NO- Proceed to troubleshooting work package: GFCI circuit breaker inoperative (WP 0038).

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check for continuity at each end of wire 1AW30 (Figure 4) between GFCI circuit breaker terminal #3 (Figure 4) and black terminal blocks L1 (Figure 4).
3. Using a multi-meter, check for continuity at each end of wire 1AW31 (Figure 4) between GFCI circuit breaker terminal #4 (Figure 4) and black terminal block L2 (Figure 4).

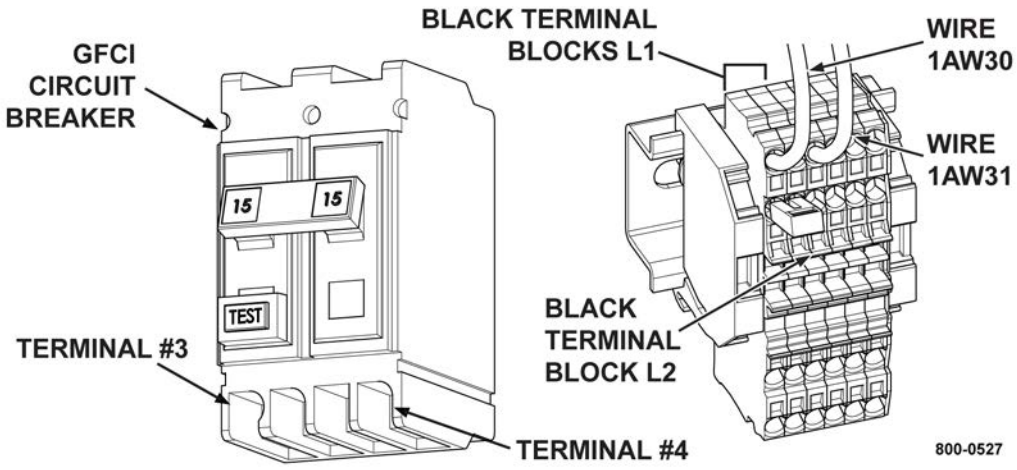


Figure 4. Continuity between GFCI Circuit Breaker and Black Terminal Blocks.

4. Is continuity present on each wire?
    a. YES-Proceed to step 5.
    b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
        (1) Connect power cord to external power plug, turn main power switch to ON position.
        (2) Verify that component operates correctly.
        (3) Install all removed components.

12 VDC POWER SUPPLY INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

5. Using a multi-meter, check for continuity at each end of wire 1AW14 (Figure 5) between black terminal block L2 (Figure 5) and the positive input terminal (N) (Figure 5) of the 12 VDC power supply.
6. Using a multi-meter, check for continuity at each end of wire 1AW18 (Figure 5) between black terminal block L1 (Figure 5) and the positive input terminal (L) (Figure 5) of the 12 VDC power supply.

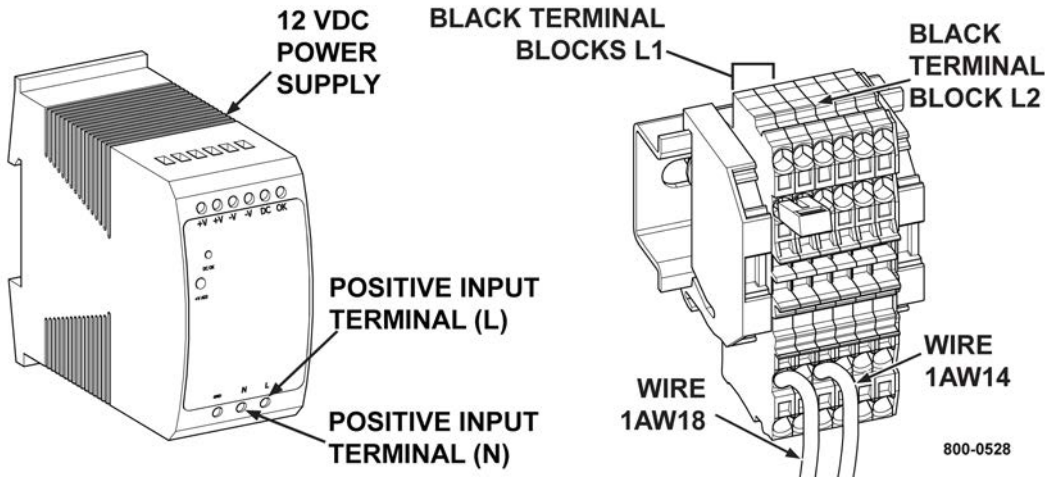


Figure 5. Continuity between 12 VDC Power Supply and Black Terminal Blocks.

7. Is continuity present at each wire?
   a. YES-Proceed to Malfunction: Faulty terminal block.
   b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty terminal block.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check for continuity at each end of black terminal blocks L1 (Figure 6).
3. Using a multi-meter, check for continuity at each end of black terminal block L2 (Figure 6).
4. Is continuity present at each terminal block?
   a. YES-Proceed to step 5.

12 VDC POWER SUPPLY INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

b. NO-Replace faulty terminal block (WP 0118) where continuity was not present.

(1) Connect power cord to external power plug, turn main power switch to ON position.

(2) Verify that component operates correctly.

(3) Install all removed components.

5. Using a multi-meter, check for continuity between both black terminal blocks L1 (Figure 6).

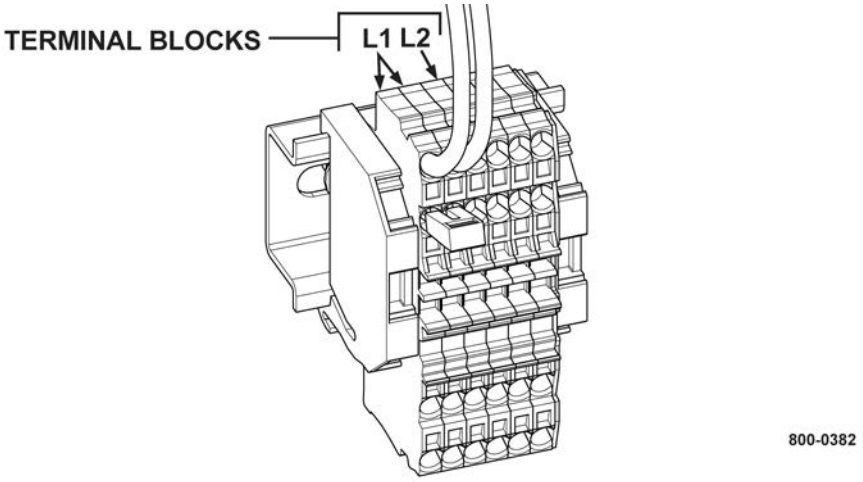


Figure 6. Black Terminal Blocks.

6. Is continuity present?

a. NO-Replace faulty jumper (WP 0119).

(1) Connect power cord to external power plug, turn main power switch to ON.

(2) Verify that component operates correctly.

(3) Install all removed components.

b. YES-Component is working correctly, install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL - GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0053
- WP 0060

References (cont.)
- WP 0113
- WP 0121
- WP 0122
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- The Ground Fault Circuit Interrupter (GFCI) circuit breaker will only function when there is a working 240 VAC single phase external power source connected to the electrical control box and main power switch is ON.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

NO POWER AT GFCI CIRCUIT BREAKER

SYMPTOM

No power at GFCI circuit breaker.

MALFUNCTION

No power at GFCI circuit breaker (output).

CORRECTIVE ACTION

1. Test and reset GFCI (WP 0053).
2. Turn main power switch to OFF position.
3. Disconnect power cord (Figure 1) from external power plug (Figure 1) on electrical control box (Figure 1).
4. Open electrical control box lid (Figure 1).

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

5. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1) to electrical control box (Figure 1).
6. Rotate electrical control box front panel (Figure 1) face down and slide into bottom of electrical control box (Figure 1).
7. Connect power cord (Figure 1) to external power plug (Figure 1) on electrical control box (Figure 1).
8. Ensure main power switch (Figure 1) is ON.

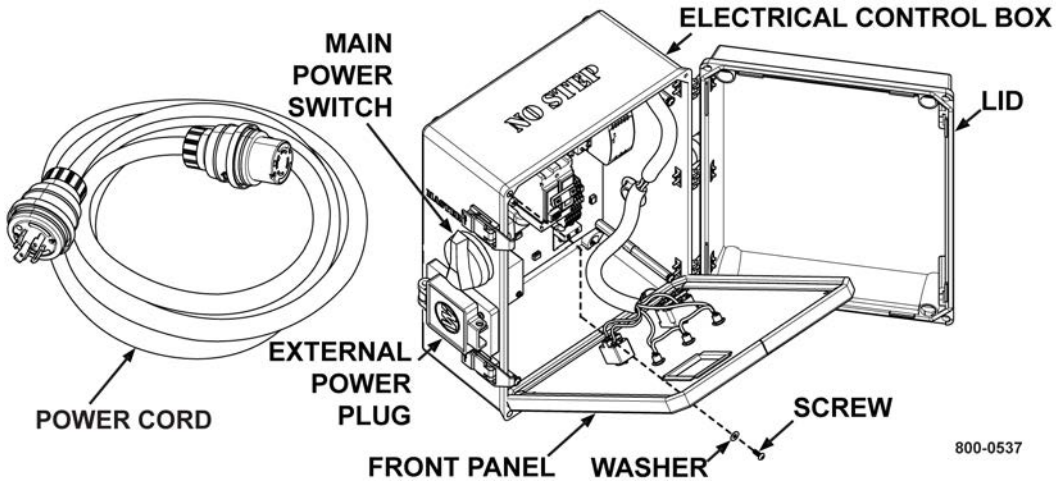


Figure 1. Electrical Control Box Front Panel Removal.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

9. Using a multi-meter, measure VAC voltage between neutral terminal (Figure 2) and terminal #3 (Figure 2) of the GFCI circuit breaker (Figure 2).
10. Using a multi-meter, measure VAC voltage between neutral terminal (Figure 2) and terminal #4 (Figure 2) of the GFCI circuit breaker (Figure 2).

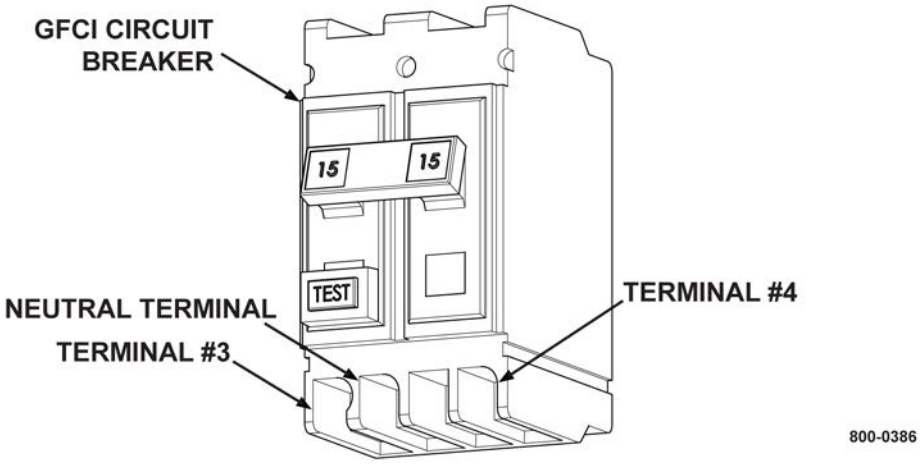


Figure 2. Breaker (Neutral and Terminals #3 and #4).

11. Does voltage measure between 115-124 VAC on both 120 V terminals #3 and #4 (Figure 2)?
    a. YES-GFCI circuit breaker is working correctly.
    b. NO-Proceed to Malfunction: No power at GFCI circuit breaker (input).

MALFUNCTION

No power at GFCI circuit breaker (input).

CORRECTIVE ACTION

1. Ensure main power switch is in the ON position.
2. Using a multi-meter, measure VAC voltage between neutral terminal (Figure 3) and terminal #1 (Figure 3) of the GFCI circuit breaker.
3. Using a multi-meter, measure VAC voltage between neutral terminal (Figure 3) and terminal #2 (Figure 3) of the GFCI circuit breaker.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

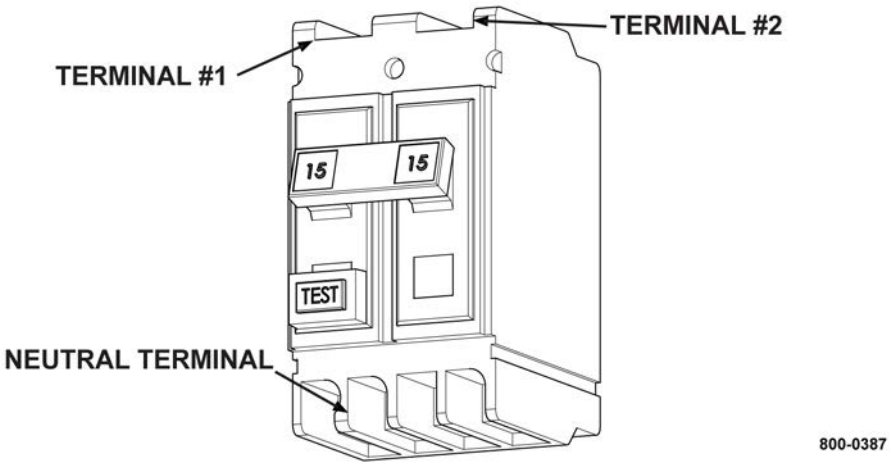


Figure 3. Breaker (Neutral and Terminals #1 and #2).

4. Does voltage measure between 115-124 VAC on both terminals #1 and #2 (Figure 3)?
   a. YES-Proceed to Malfunction: Faulty GFCI circuit breaker.
   b. NO-Proceed to Malfunction: Faulty wiring.

MALFUNCTION

Faulty GFCI circuit breaker.

CORRECTIVE ACTION

1. Replace GFCI circuit breaker (WP 0113).
2. Connect power cord to external power plug, turn main power switch to ON position.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

3. Verify that component operates correctly.
4. Install all removed components.

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch (Figure 4) to OFF position.
2. Disconnect power cord from external power plug on electrical control box.
3. Using a multi-meter, check for continuity between each end of wire 1AW7 (Figure 4) between the main power switch (Figure 4) and the GFCI circuit breaker (Figure 4).
4. Using a multi-meter, check for continuity between each end of wire 1AW5 (Figure 4) between the main power switch (Figure 4) and the GFCI circuit breaker (Figure 4).

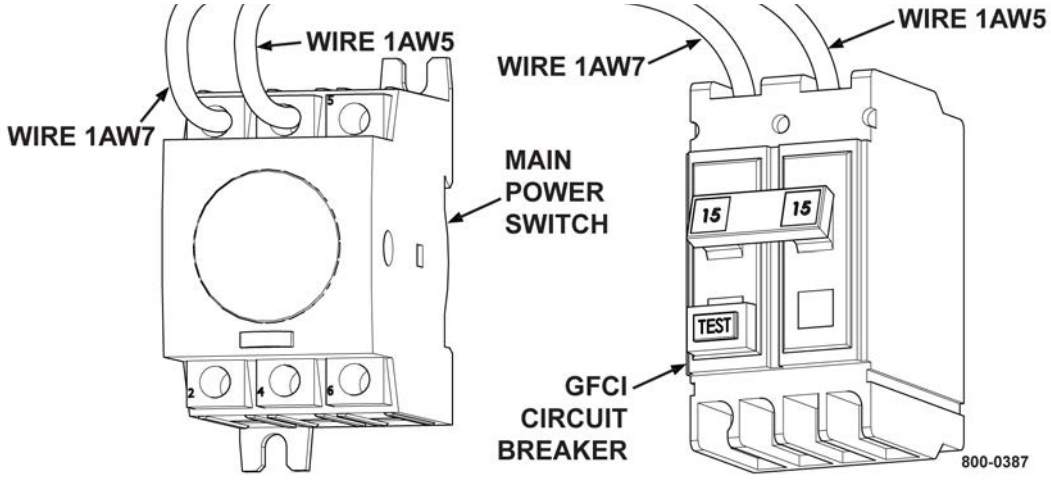


Figure 4. Continuity between Main Power Switch and GFCI Circuit Breaker.

5. Is continuity present on both wires?
   a. YES-Proceed to Malfunction: No power at main power switch.
   b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

MALFUNCTION

No power at main power switch (output).

CORRECTIVE ACTION

1. Connect power cord to external power plug on electrical control box.
2. Turn main power switch (Figure 5) to ON position.
3. Using a multi-meter, measure VAC voltage between terminal #5 (Figure 5) and terminal #3 (Figure 5) of the main power switch (Figure 5).
4. Using a multi-meter, measure VAC voltage between terminal #5 (Figure 5) and terminal #1 (Figure 5) of the main power switch (Figure 5).

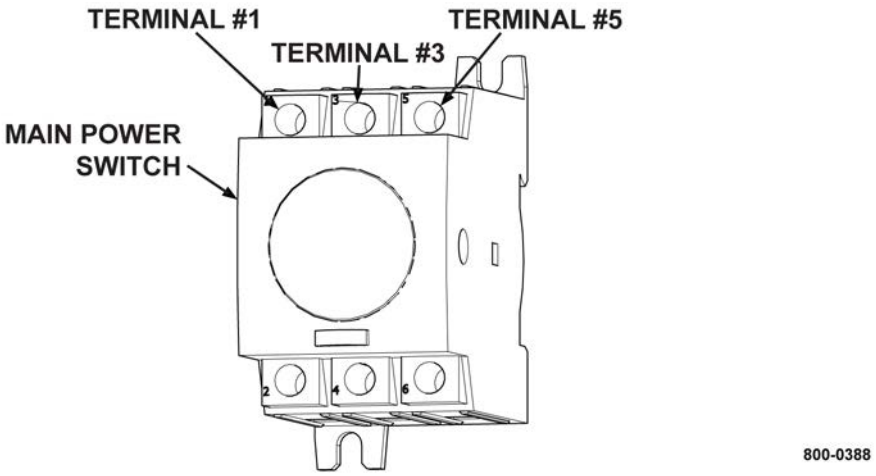


Figure 5. Main Power Switch (Output).

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

5. Does voltage measure between 115-124 VAC on each of the positive terminals?
   a. YES-Main power switch is working properly.
   b. NO-Proceed to Malfunction: No power to main power switch (input).

MALFUNCTION

No power at main power switch (input).

CORRECTIVE ACTION

1. Using a multi-meter, measure VAC voltage between terminal #6 (Figure 6) and terminal #4 (Figure 6) of the main power switch (Figure 6).
2. Using a multi-meter, measure VAC voltage between terminal #6 (Figure 6) and terminal #2 (Figure 6) of the main power switch (Figure 6).

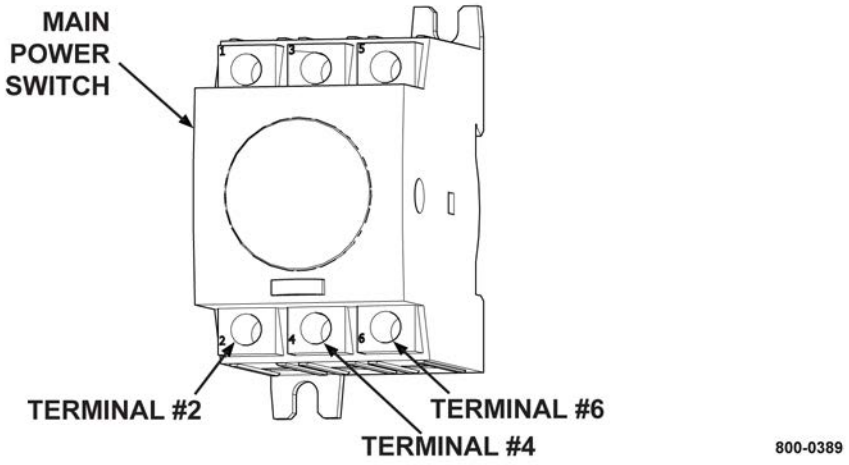


Figure 6. Main Power Switch (Input).

3. Does voltage measure between 115-124 VAC on each of the positive terminals?
   a. YES- Proceed to Malfunction: Faulty main power switch.
   b. NO- Proceed to Malfunction: Faulty wiring.

MALFUNCTION

Faulty main power switch.

CORRECTIVE ACTION

1. Replace main power switch (WP 0122).
2. Connect power cord to external power plug, turn main power switch (Figure 6) to ON position.
3. Verify that component operates correctly.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

4. Install all removed components.

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch (Figure 7) to OFF position.
2. Disconnect power cord from external power plug on electrical control box.
3. Using a multi-meter, check for continuity at each end of wire 1AW1 (Figure 7) between the main power switch (Figure 7) and the external power plug (Figure 7).
4. Using a multi-meter, check for continuity at each end of wire 1AW2 (Figure 7) between the main power switch (Figure 7) and the external power plug (Figure 7).
5. Using a multi-meter, check for continuity at each end of wire 1AW3 (Figure 7) between the main power switch (Figure 7) and the external power plug (Figure 7).

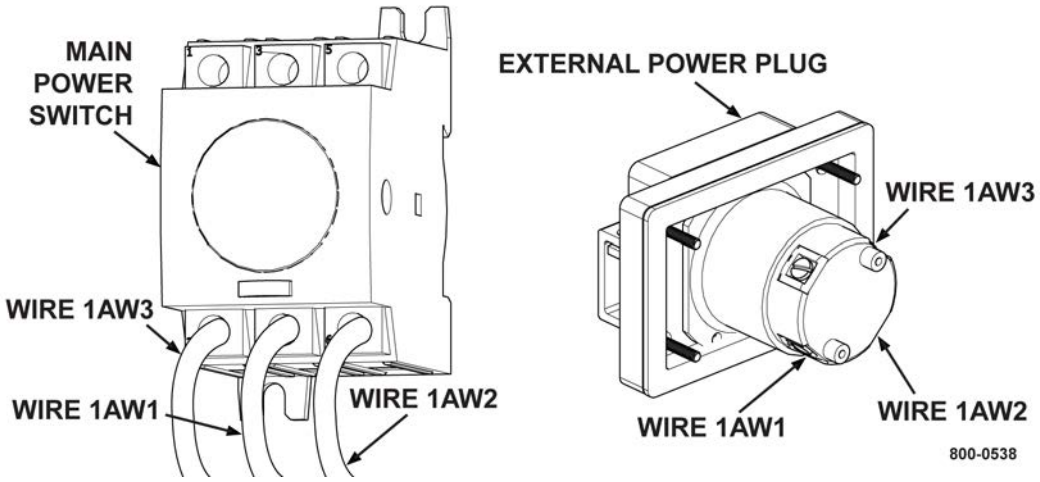


Figure 7. Continuity at Wire Ends.

6. Is continuity present on all wires?
   a. YES-Proceed to Malfunction: No power at external power plug.
   b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

NO POWER AT GFCI CIRCUIT BREAKER - Continued

MALFUNCTION

No power at external power plug (output).

CORRECTIVE ACTION

1. Connect power cord to external power plug (Figure 8) on electrical control box.
2. Turn main power switch to ON position.
3. Using a multi-meter, measure VAC voltage between neutral terminal white wire 1AW2 (Figure 8) and positive terminal black wire 1AW3 (Figure 8) where they connect to external power plug (Figure 8).
4. Using a multi-meter, measure VAC voltage between neutral terminal white wire 1AW2 (Figure 8) and positive terminal red wire 1AW1 (Figure 8) where they connect to external power plug (Figure 8).

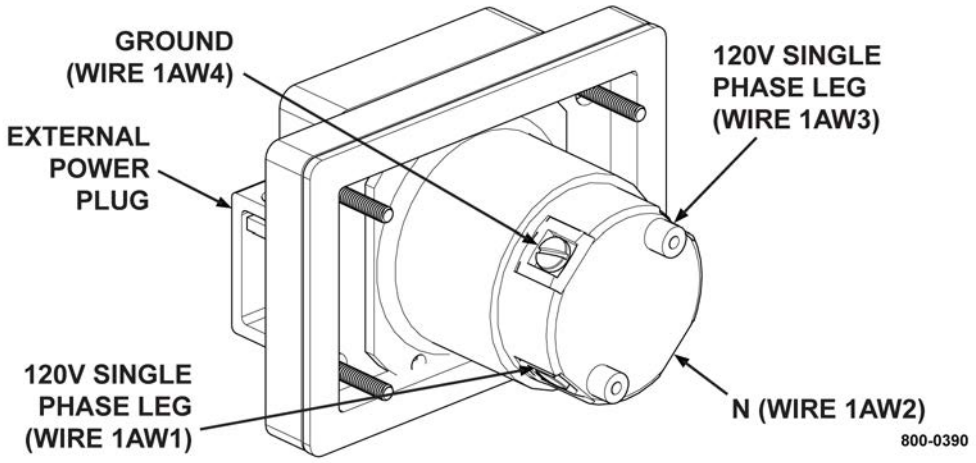


Figure 8. External Power Plug.

5. Does voltage measure between 115-124 VAC on each of the positive terminals?
   a. YES-External power plug working properly.
   b. NO-Proceed to Malfunction: No power at power cord.

MALFUNCTION

No power at power cord (output).

CORRECTIVE ACTION

1. Turn main power switch to OFF position.
2. Disconnect power cord from external power plug on electrical control box.
3. Using a multi-meter, check for continuity between each end of power cord at all four connections (Figure 9).

NO POWER AT GFCI CIRCUIT BREAKER - Continued

CORRECTIVE ACTION- Continued

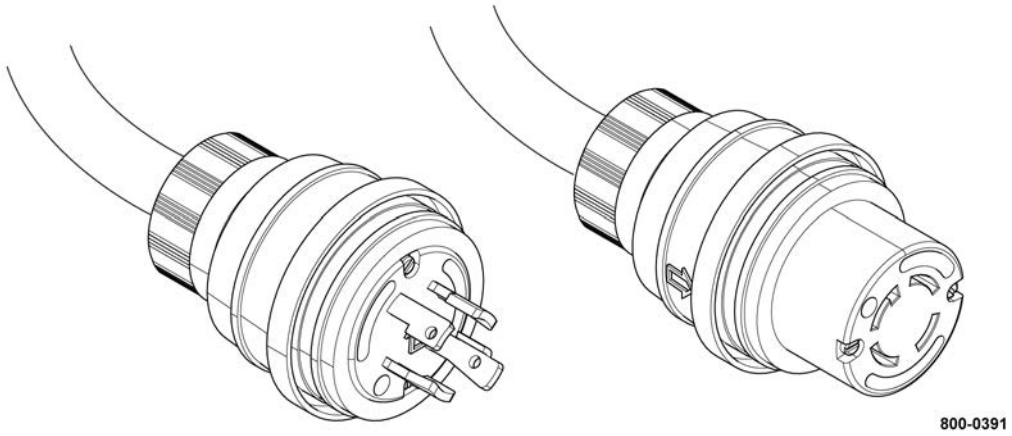


Figure 9. Power Cord.

4. Is continuity present on all wires?
   a. YES-Proceed to Malfunction: Faulty external power plug
   b. NO-Replace power cord (WP 0060).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty external power plug.

CORRECTIVE ACTION

1. Replace external power plug (WP 0121).
2. Connect power cord to external power plug, turn main power switch to ON position.
3. Verify that component operates correctly.
4. Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL - HEAT BLANKET THERMOSTAT INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0032
- WP 0053

References (cont.)
- WP 0074
- WP 0115
- WP 0118
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

HEAT BLANKET THERMOSTAT INOPERATIVE

SYMPTOM

Heat blanket thermostat inoperative.

MALFUNCTION

No power to heat blanket thermostat.

CORRECTIVE ACTION

NOTE

Complete field troubleshooting (WP 0032, steps 1-8), prior to starting this work package.

1. Ensure Ground Fault Circuit Interrupter (GFCI) circuit breaker bar is reset (WP 0053) and in the UP position.
2. Using a multi-meter, check AC voltage between neutral terminal (Figure 1) and terminal (L1) (Figure 1) at top of heat blanket thermostat (Figure 1).

HEAT BLANKET THERMOSTAT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

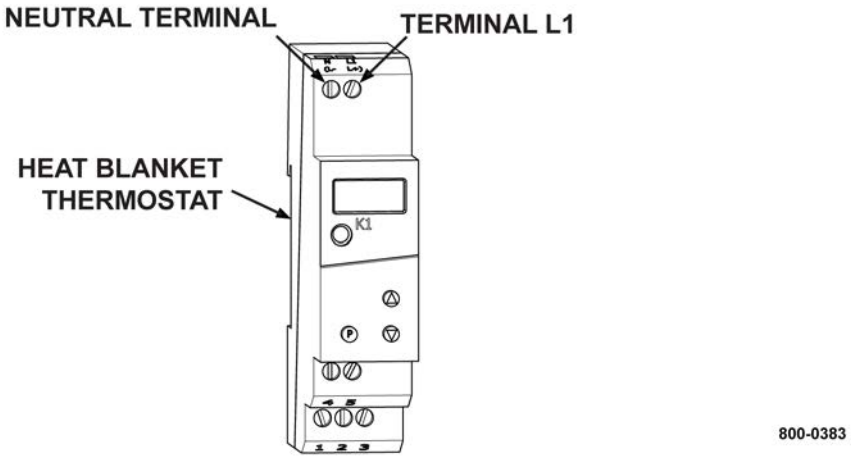


Figure 1. Thermostat.

3. Is voltage between 115-124 VAC at both terminals?
   a. YES-Proceed to malfunction: Faulty sensor.
   b. NO-Proceed to malfunction: Faulty wiring.

MALFUNCTION

Faulty sensor.

CORRECTIVE ACTION

1. Turn main power switch to OFF position.
2. Disconnect power cord from external power plug on electrical control box.

HEAT BLANKET THERMOSTAT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

3. Disconnect red wire 1DW1R (Figure 2) from terminal #4 (Figure 2) at the heat blanket thermostat (Figure 2).
4. Using a multi-meter, check for resistance between red wire 1DW1R (Figure 2) and white wire 1DW1W (Figure 2), terminal #5 (Figure 2) heat blanket thermostat (Figure 2).
5. Reconnect red wire 1DW1R (Figure 2) to terminal #4..
6. Is resistance between 70 and 130 ohms?
   a. YES-Proceed to step 7.
   b. NO-Replace water tank assembly (WP 0074).
7. Connect power cord to external power plug, turn main power switch to ON position.
8. Using a multi-meter, check AC voltage between neutral terminal (Figure 2) and terminal #2 (Figure 2) of heat blanket thermostat (Figure 2).

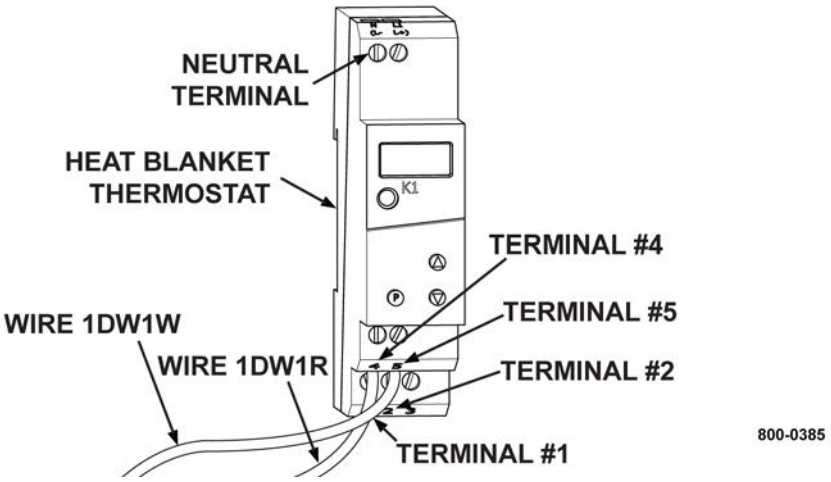


Figure 2. Heat Blanket Thermostat Terminals.

9. Is voltage between 115-124 VAC at terminal #2?
   a. YES-Thermostat is functioning correctly.
   b. NO-Proceed to step 10.
10. Using a multi-meter, check AC voltage between neutral terminal (Figure 2) and terminal #1 (Figure 2) of heat blanket thermostat (Figure 2).

HEAT BLANKET THERMOSTAT INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

11. Is voltage between 115-124 VAC at terminal #1?
    a. YES-Replace heat blanket thermostat (WP 0115).
    b. NO-Proceed to Malfunction: Faulty wire 1AW16.

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check for continuity between each end of neutral wire 1AW13 (Figure 3) from the heat blanket thermostat neutral terminal (Figure 3) to gray neutral terminal block (Figure 3).
3. Using a multi-meter, check for continuity between each end of positive wire 1AW8 (Figure 3) from the heat blanket thermostat terminal L1 (Figure 3) to black terminal block L2 (Figure 3).

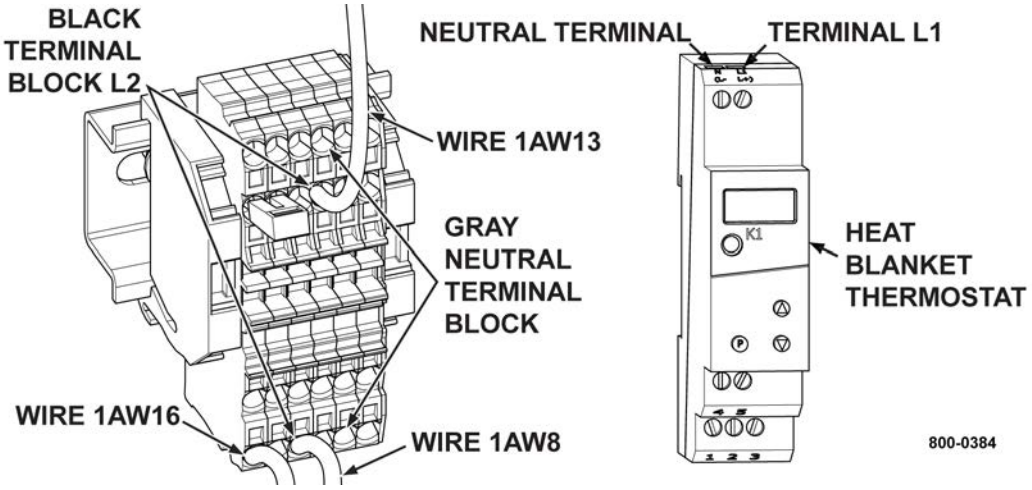


Figure 3. Continuity between Heat Blanket Thermostat and Gray and Black Terminal Block.

4. Is continuity present on both wires?
    a. YES-Proceed to malfunction: Faulty terminal block.
    b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
        (1) Connect power cord to external power plug, turn main power switch to ON position.
        (2) Verify that component operates correctly.
        (3) Install all removed components.

HEAT BLANKET THERMOSTAT INOPERATIVE - Continued

MALFUNCTION

Faulty wire 1AW16.

CORRECTIVE ACTION

1. Replace wire 1AW16 (Figure 3). Refer to electrical general maintenance instructions (WP 0152), replacing wires.
2. Connect power cord to external power plug, turn main power switch to ON position.
3. Verify that component operates correctly.
4. Install all removed components.

MALFUNCTION

Faulty terminal block.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
2. Using a multi-meter, check for continuity at each end of gray neutral terminal block (Figure 3).
3. Using a multi-meter, check for continuity at each end of black terminal blocks L2 (Figure 3).
4. Is continuity present at each terminal block?
   a. YES-Proceed back to step 1.
   b. NO-Replace faulty terminal block (WP 0118) where continuity was not present.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL - 4 POLE CONTACTOR INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Multi-meter (WP 0191, Table 1, Item 9)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0053

References (cont.)
- WP 0114
- WP 0118
- WP 0119
- WP 0152

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Camel II connected to 240 VAC single phase power source

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

NOTE

- Always inspect wiring connectors that are involved in the circuit. Poor connections can often be the cause of the problem in an electrical circuit. Verify that all connections in the circuit are clean, secure, and that all connections are in good condition. If a problem with the connection is found, correct the problem and verify that the malfunction is active before performing this procedure.
- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

TROUBLESHOOTING PROCEDURE

4 POLE CONTACTOR INOPERATIVE

SYMPTOM

4 pole contactor inoperative.

MALFUNCTION

No power to 4 pole contactor.

CORRECTIVE ACTION

1. Remove four screws (Figure 1) and flat washers (Figure 1) that connect electrical control box front panel (Figure 1). Remove electrical control box front panel from electrical control box (Figure 1), set aside, leaving all wiring connections intact.

4 POLE CONTACTOR INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

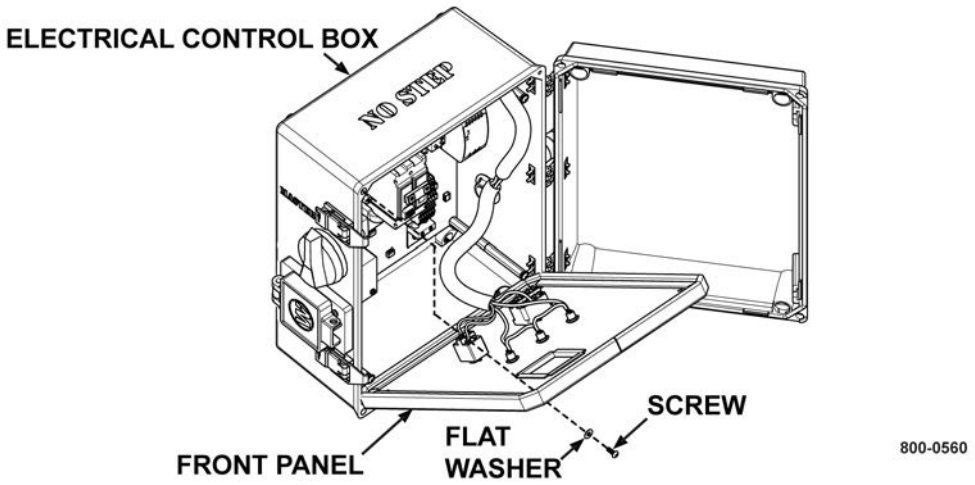


Figure 1. Electrical Control Box Front Panel Removal.

2. Test and reset Ground Fault Circuit Interrupter (GFCI) circuit breaker (WP 0053).
3. Ensure heat blanket switch is in ON position.

4 POLE CONTACTOR INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

4. Using a multi-meter, measure AC voltage between positive terminal A1 (Figure 2) and neutral terminal A2 (Figure 2) of 4 pole contactor (Figure 2).
5. Is voltage between normal range 115-124 VAC?
   a. YES-Proceed to step 6.
   b. NO-If voltage is outside normal range inspect neutral connections.

      Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.
6. Using a multi-meter, measure AC voltage at 4 pole contactor positive input terminal #13 (Figure 2) with a known ground.
7. Using a multi-meter, measure AC voltage at 4 pole contactor positive input terminal #43 (Figure 2) with a known ground.

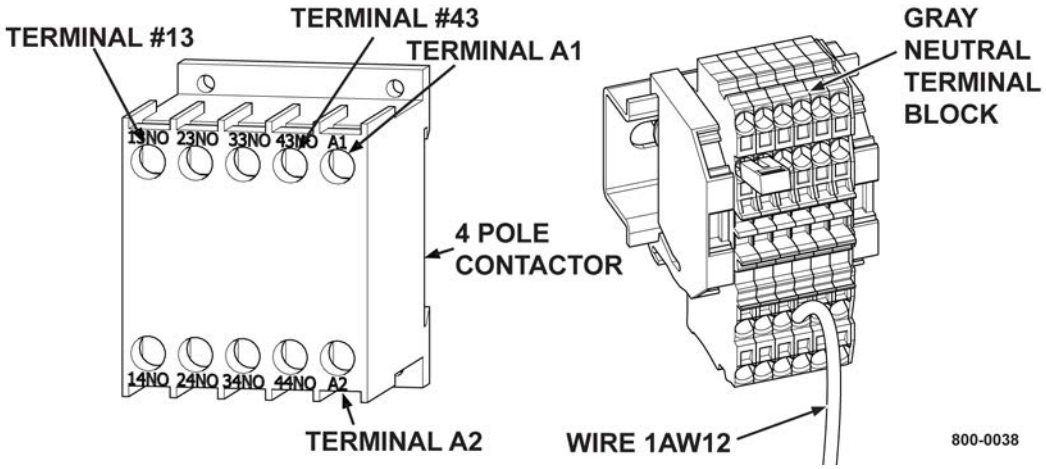


Figure 2. 4 Pole Contactor Inputs and Outputs.

8. Is voltage between 115-124 VAC on each pin?
   a. Yes-Replace 4 pole contactor (WP 0114).
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
   b. NO- Proceed to Malfunction: Faulty wiring.

MALFUNCTION

Faulty wiring.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

4 POLE CONTACTOR INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Using a multi-meter, check for continuity at each end of wires 1AW17 (Figure 3) between the 4 pole contactor (Figure 3) and terminal block L1 (Figure 3).
3. Using a multi-meter, check for continuity at each end of wires 1AW15 (Figure 3) between the 4 pole contactor (Figure 3) and black terminal block L2 (Figure 3) .

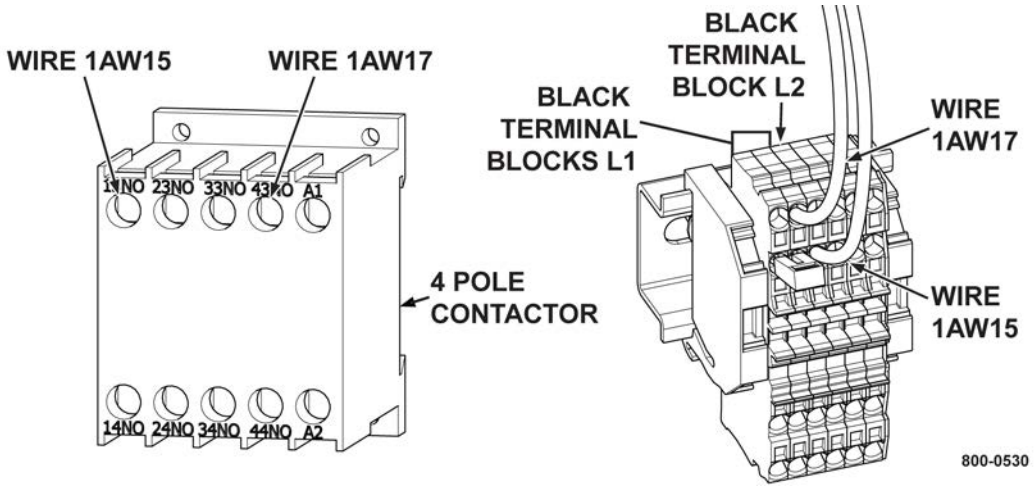


Figure 3. Continuity between 4 Pole Contactor and Terminal Block L1 and L2.

4. Is continuity present on each wire?
   a. YES-Proceed to Malfunction: Faulty terminal block.
   b. NO-Replace the faulty wire where continuity was not present. Refer to electrical general maintenance instructions (WP 0152), replacing wires.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.

MALFUNCTION

Faulty terminal block.

CORRECTIVE ACTION

1. Turn main power switch to OFF position and disconnect power cord from external power plug on electrical control box.

4 POLE CONTACTOR INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

2. Using a multi-meter, check for continuity at each end of black terminal blocks L1 (Figure 4, Item 1).
3. Using a multi-meter, check for continuity at each end of black terminal block L2 (Figure 4, Item 3).
4. Is continuity present at each terminal block?
   a. YES-Proceed to step 5.
   b. NO-Replace faulty terminal block (WP 0118) where continuity was not present.
      (1) Connect power cord to external power plug, turn main power switch to ON position.
      (2) Verify that component operates correctly.
      (3) Install all removed components.
5. Using a multi-meter, check for continuity between both black terminal blocks L1 (Figure 4, Item 2).

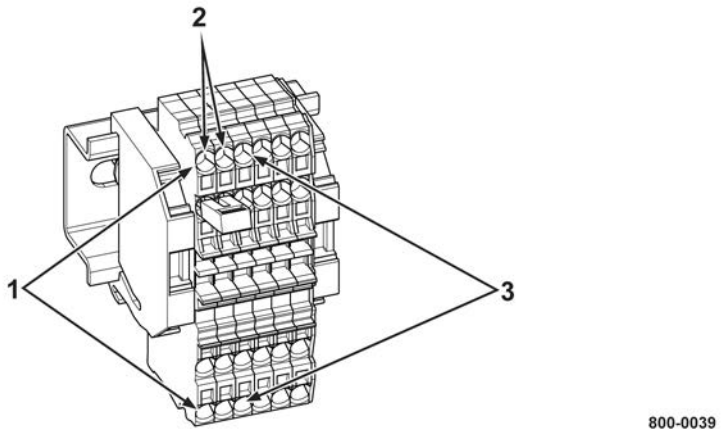


Figure 4. Jumper.

6. Is continuity present?

   NO-Replace faulty jumper (WP 0119).
   (1) Connect power cord to external power plug, turn main power switch to ON position.
   (2) Verify that component operates correctly.
   (3) Install all removed components.

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-DISPENSING SYSTEM INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0005

References (cont.)
WP 0136
WP 0137

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

CAUTION

When operating dispensing system in cold weather environment ice may form inside valve. Do not force valve movement. Failure to comply may result in damage to equipment.

TROUBLESHOOTING PROCEDURE

DISPENSING SYSTEM INOPERATIVE

SYMPTOM

Main dispensing valve inoperative.

MALFUNCTION

Inoperative dispensing valve handle and valve shaft.

CORRECTIVE ACTION

Remove main dispensing valve handle (WP 0136). Inspect handle and shaft connection for damage. Replace handle as needed. If shaft is damaged refer to (WP 0137) for replacement of main dispensing valve.

MALFUNCTION

Inoperative main dispensing valve.

CORRECTIVE ACTION

1. Drain water tank (WP 0005).
2. Remove main dispensing valve (WP 0137).
3. Inspect pipe opening behind the main dispensing valve for obstruction.
4. Inspect valve body, gasket and valve shaft for damage. Replace damaged part as needed, refer to (WP 0137).

DISPENSING SYSTEM INOPERATIVE - Continued

CORRECTIVE ACTION - Continued

5. Replace main dispensing valve (WP 0137), check for proper operation (WP 0005).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-MAIN DISPENSING VALVE LEAKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0137

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

MAIN DISPENSING VALVE LEAKING

SYMPTOM

Main dispensing valve leaking.

MALFUNCTION

Faulty valve.

CORRECTIVE ACTION

Inspect valve body, gasket, and valve shaft for damage. Replace as needed, refer to (WP 0137).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-DISPENSING PIPE FITTINGS LEAKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0061
WP 0063

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

DISPENSING PIPE FITTINGS LEAKING

SYMPTOM

Dispensing pipe fittings leaking.

MALFUNCTION

Loose or worn pipe fittings.

CORRECTIVE ACTION

Inspect pipe fittings for loose or damaged parts. Replace damaged parts as needed, refer to (WP 0063) for six point dispensing system or (WP 0061) for single point dispensing system. Tighten fittings as needed.

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-DISCHARGE HOSE EXTENSION ASSEMBLY LEAKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0135

References (cont.)
WP 0137
WP 0139

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

DISCHARGE HOSE EXTENSION ASSEMBLY LEAKING

SYMPTOM

Discharge hose extension assembly leaking.

MALFUNCTION

Loose or damaged discharge hose extension assembly.

CORRECTIVE ACTION

1. Remove discharge box wool insulation, refer to (WP 0135).
2. Inspect discharge hose extension for loose or damaged parts. Replace damaged parts as needed, refer to (WP 0139) for repair.
3. Ensure hose extension fittings are seated fully into hose extension and hose clamps are tight. Replace hose clamps as needed, refer to (WP 0139).
4. Inspect valve body, gasket, and valve shaft for damage. Replace as needed, refer to (WP 0137).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-FRONT FLANGE COVER LEAKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0084

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

FRONT FLANGE COVER LEAKING

SYMPTOM

Front flange cover leaking.

MALFUNCTION

Loose or damaged flange covers.

CORRECTIVE ACTION

Inspect flange covers for loose or damaged parts. Tighten or replace damaged parts as needed, refer to (WP 0084).

MALFUNCTION

Front flange gasket worn or unserviceable.

CORRECTIVE ACTION

Replace, front flange gasket refer to (WP 0084).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-WATER LEVEL INDICATOR INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0005
WP 0082

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

WATER LEVEL INDICATOR INOPERATIVE

SYMPTOM

Water level gauge assembly inoperative.

WATER LEVEL INDICATOR INOPERATIVE - Continued

MALFUNCTION

Water level gauge assembly inoperative.

CORRECTIVE ACTION

Inspect water gauge assembly for loose or damaged parts. Replace damaged parts as needed, refer to (WP 0082).

MALFUNCTION

Water level indicator gauge mechanism inoperative.

CORRECTIVE ACTION

WARNING

A confined space entry permit is required before entering the water tank. No one is to enter the tank without a permit, the required training, and necessary personal protective equipment. Failure to comply may result in injury or death to personnel.

CAUTION

Proper protective foot wear required to enter tank. Do not enter tank with any material, tools or clothing that contain metal parts. Failure to comply may result in damage to equipment.

1. Drain water tank (WP 0005).
2. Inspect water level indicator gauge mechanism for loose, damaged, or missing parts. Replace parts as needed, refer to (WP 0082).
3. Rotate water level indicator gauge mechanism up and down to ensure free movement. If gauge mechanism is not moving freely, replace water level indicator gauge mechanism, refer to (WP 0082).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-WATER TEMPERATURE INDICATOR INOPERATIVE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0078

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

WATER TEMPERATURE INDICATOR INOPERATIVE

SYMPTOM

Water temperature indicator or sensor inoperative.

MALFUNCTION

No/Faulty temperature indicator.

CORRECTIVE ACTION

Replace water temperature indicator and sensor (WP 0078).

END OF WORK PACKAGE

FIELD MAINTENANCE
PLUMBING-MANHOLE COVER LEAKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

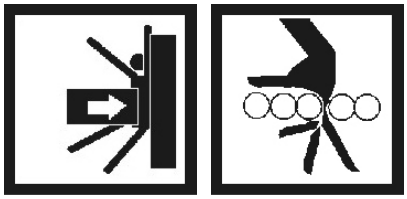
Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0090
WP 0091

GENERAL

This work package contains field maintenance troubleshooting information for the Camel II. Use this work package to help isolate and correct system problems.

WARNING



- Trailer must be secure. Always chock the wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in injury or death to personnel and/or damage to equipment.

TROUBLESHOOTING PROCEDURE

MANHOLE COVER LEAKING

SYMPTOM

Manhole cover leaking.

MALFUNCTION

Manhole cover seal worn or damaged.

CORRECTIVE ACTION

1. Check manhole cover seal for worn or broken areas.
2. Replace manhole cover seal (WP 0091).

MALFUNCTION

Manhole cover for bent or broken.

CORRECTIVE ACTION

1. Check manhole cover for bent or broken components.
2. Replace manhole cover (WP 0090) as needed.

END OF WORK PACKAGE

CHAPTER 5

OPERATOR MAINTENANCE INSTRUCTIONS

OPERATOR MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - INTRODUCTION

GENERAL

To ensure the Camel II is ready for operation at all times, it must be inspected on a regular basis so defects may be found and corrected before they result in injury, damage, or equipment failure.

Operator PMCS (WP 0050) contains systematic instructions on inspections, lubrications, services, tests, and corrections to be performed by Operators to keep your equipment in good operating condition and ready for its primary mission.

The Operator Level PMCS is performed before, during, after, and weekly. The Operator Level PMCS contains checks and services necessary to ensure that the Camel II is ready for operation.

For information on Corrosion Prevention and Control (CPC), refer to (WP 0001).

EXPLANATION OF TABLE ENTRIES

Item Number (Item No.) Column. Numbers in this column are for reference. When completing DA Form 2404 or DA Form 5988-E (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must perform checks and services for the interval listed.

NOTE

If both man-hours and calendar interval are provided, perform check or service at whichever interval comes first.

Interval Column. This column tells you when you must perform the procedure in the procedure column.

- Weekly procedures must be performed weekly.
- Before you begin operating the equipment, do “Before” PMCS.
- During operation, do “During” PMCS.
- After operation, do “After” PMCS.

Man-Hours Column. This column indicates man-hours required to complete prescribed procedure.

Item to be Checked or Serviced Column. This column provides the location and item to be checked or serviced.

NOTE

The WARNINGs and CAUTIONs appearing in your PMCS table should always be observed. WARNINGs and CAUTIONs appear before applicable procedures. You must observe these WARNINGs to prevent serious injury to yourself and others, and CAUTIONs to prevent your equipment from being damaged.

Procedure Column. This column gives the procedure you must perform to check or service the item listed in the Item to Check/Service column, to know if the equipment is ready or available for its intended mission. You must perform the procedure at the time stated in the Interval column.

Equipment Not Ready/Available If: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you perform check/service procedures that show faults listed in this column, the equipment is not mission-capable. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

GENERAL INSPECTION AND SERVICE PROCEDURES

Always perform PMCS in the same order so it gets to be a habit. Once you have had some practice, you will spot anything wrong in a hurry. If any deficiency is discovered, perform the appropriate troubleshooting task in Chapter 3 of this manual. If any component or system is not serviceable or if the given service does not correct the deficiency, notify field maintenance.

Before performing preventive maintenance, read all the checks required for the applicable interval and prepare everything needed to make all the checks. Have several clean rags handy. Perform ALL inspections at the applicable interval.

Cleanliness

Dirt, grease, oil, and debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use general purpose liquid detergent and water when you clean rubber, plastic, and painted surfaces. Always perform PMCS on a clean system.

Bolts, Nuts and Screws

Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition. You cannot try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one is loose, tighten it.

Welds

Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to field maintenance.

Electric Wires and Connectors

Look for cracked or broken insulation, bare wires, and loose or broken connectors. Reconnect loose connectors. Ensure wires are in good condition

Rust and Corrosion

Check metal parts for rust and corrosion. If any bare metal or corrosion exists, clean and apply a light coat of OE/HDO lubricating oil. Report it to field maintenance.

Fluid Lines and Fittings

Look for wear, damage, or leaks and make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, correct it if authorized by the Maintenance Allocation Chart (WP 0187). If not authorized, notify field maintenance.

LUBRICATION SERVICE

General

Included in PMCS are lubrication services to be performed by the operator and general instructions listed below:

- Keep all lubricants in an environmental storage container and store in a clean, dry place away from extreme heat. Keep container covers clean and do not allow dust, dirt, or other foreign material to mix with lubricants. Keep lubrication equipment clean and ready for use. Clean top of container before opening.
- Keep container covers clean and do not allow dust, dirt, or other foreign material to mix with lubricants. Keep lubrication equipment clean and ready for use. Clean top of container before opening.

GENERAL INSPECTION AND SERVICE PROCEDURES - Continued

- Maintain a record of lubrication performed and report any problems noted during lubrication. Refer to DA PAM 750-8 for forms and procedures to record and report any findings.

Lubrication Interval Symbol

The following lubrication interval symbol will be used as applicable:

- M-monthly

FLUID LEAKAGE

It is necessary for you to know how fluid leakage affects the status of your machine. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your machine. Learn and be familiar with them and remember: when in doubt, notify your supervisor.

CAUTION

Operation is allowable with Class I and Class II leakage, EXCEPT for fuel, where NO leaks are allowed. WHEN IN DOUBT, NOTIFY FIELD MAINTENANCE. When operating with Class I or Class II leaks, check fluid levels more frequently. Class III leaks must be reported immediately to field maintenance. Failure to do this will result in damage to machine and/or components.

NOTE

Notify field maintenance of any leaks you cannot fix.

LEAKAGE DEFINITIONS FOR PMCS:

Class I. Seepage of fluid indicated by wetness or discoloration not great enough to form drops.
Class II. Leakage of fluid great enough to form drops, but not enough to cause drops to fall from component being checked or inspected.
Class III. Leakage of fluid great enough to form drops that fall from the item being checked or inspected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS), INCLUDING LUBRICATION INSTRUCTIONS (LI)

INITIAL SETUP:

Tools and Special Tools
- Adjustable, Wrench, 10 in. (WP 0188, Table 2, Item 1)
- Plier, Slip-Joint (WP 0188, Table 2, Item 23)
- Screwdriver, Crosstip (WP 0188, Table 2, Item 26)
- Screwdriver, Flat Tip (WP 0188, Table 2, Item 27)

Materials/Parts
- Cleaning Compound, Solvent, Type III (WP 0190, Table 1, Item 4)
- OIL: Lubricating (WP 0190, Table 1, Item 10)
- Rag, Wiping (WP 0190 Table 1, Item 11)

Personnel Required
- Two

References
- MIL-PRF-680, Type III
- TM 9-2330-394-13&P
- WP 0005
- WP 0007
- WP 0053

Table 1. PMCS Procedures

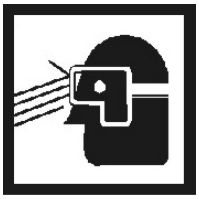
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				WARNING  • Wear eye protection when working on the Camel II. • Trailer must be secure. Always chock wheels before working on the Camel II. • Failure to comply may result in serious injury or death to personnel and/or damage to equipment. **NOTE** • Perform all Operator Preventative Maintenance Checks and Services (PMCS) on the M1095 Series, 5 Ton, Medium Tactical Trailer TM 9-2330-394-13&P. • After performing BEFORE PMCS, ensure all BII items are stored. Return system to original operating condition. • BEFORE PMCS should be performed with an empty tank.	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before		Front Flange	1. Visually inspect front flange (Figure 1, Item 1) for damaged or missing parts.	If class III leakage evident.

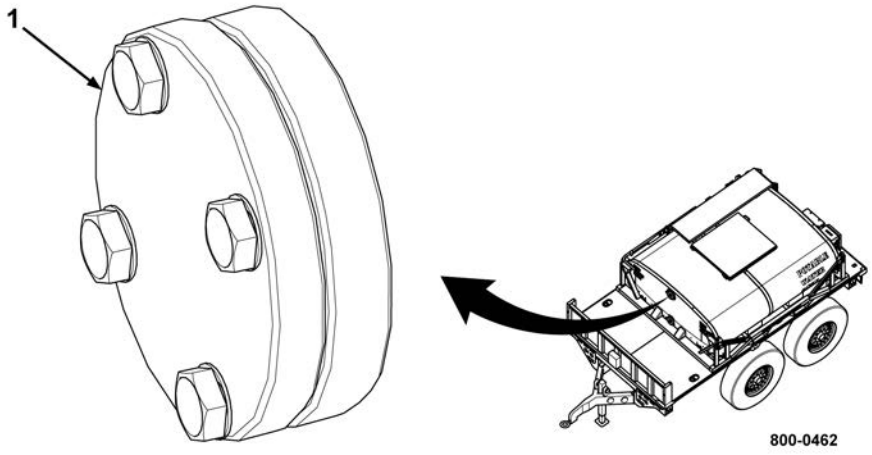


Figure 1. Front Flange (Before Interval).

2	Before		Water Tank	1. Inspect water tank outer shell (Figure 2, Item 2) for damage, loose, missing parts, gouges, or holes.	If any damage that prevents operations.
				2. Inspect water tank frame (Figure 2, Item 3) for obvious damage or cracked welds.	If any damage that prevents operations.
				3. Check inside of water tank (Figure 2, Item 1) for contamination or damage.	Inside water tank is contaminated or damaged.

Table 1. PMCS Procedures - Continued

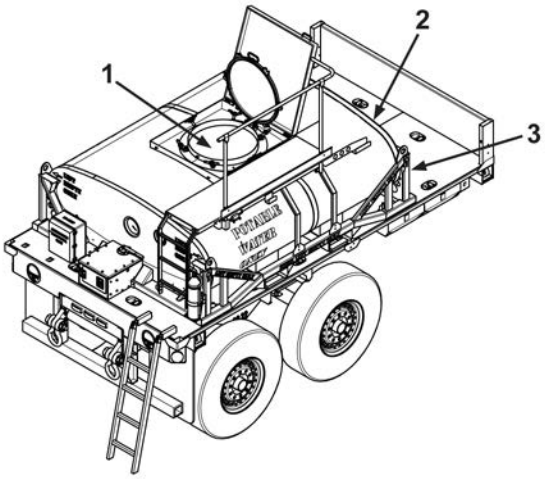
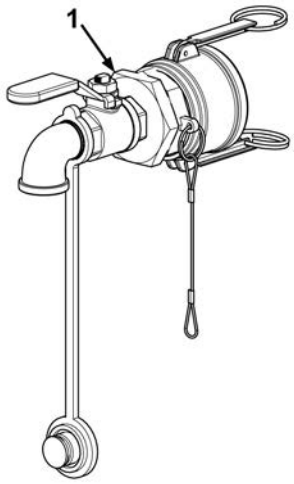
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
					
				Figure 2. Water Tank (Before Interval).	
3	Before		Single Point Dispensing System	1. Remove single point dispensing system (Figure 3, Item 1) from storage bag and inspect for damage, loose, or missing parts.	If any damage that prevents operations below 32°F.
					
				Figure 3. Single Point Dispensing System (Before Interval).	
4	Before		Six Point Dispensing System	1. Remove six point dispensing system (Figure 4, Item 1) from storage bag and inspect for damaged, loose, or missing parts.	If all six dispensing valves are not operational.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

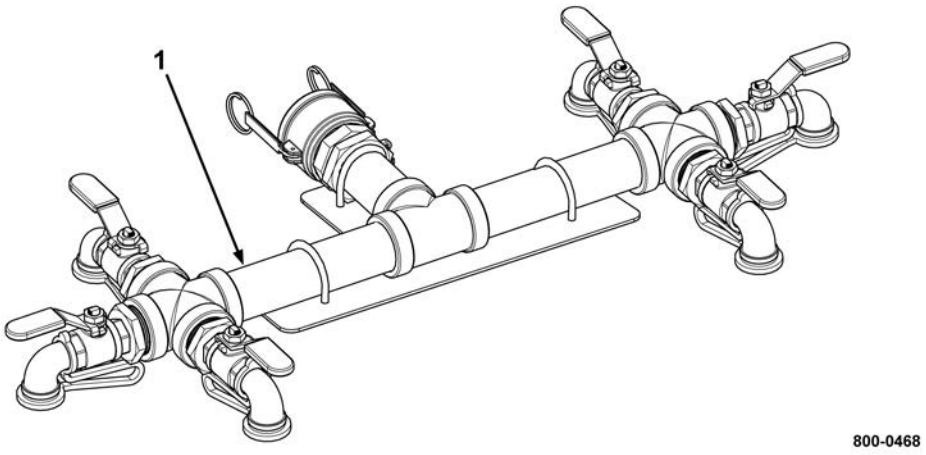


Figure 4. Six Point Dispensing System (Before Interval).

5	Before		Dispensing Support Trailer Mount Bracket	1. Remove trailer mount bracket (Figure 5, Item 1) from storage bag and inspect for damaged, loose, or missing parts.	If damaged, loose, or missing parts.

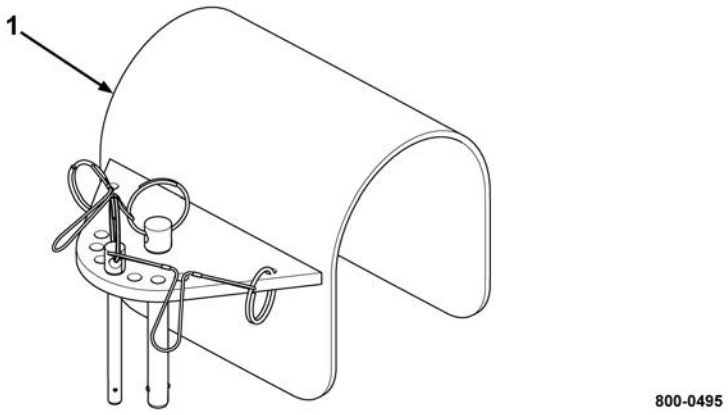


Figure 5. Dispensing Support Trailer Mount Bracket (Before Interval).

6	Before		Dispensing Stand Assembly	1. Remove dispensing support stand (Figure 6, Item 1) from storage bag and inspect for damaged, loose, or missing parts.	

Table 1. PMCS Procedures - Continued

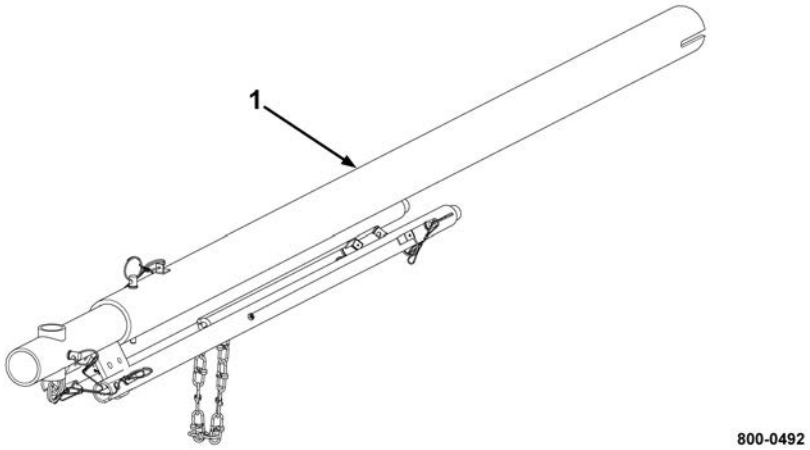
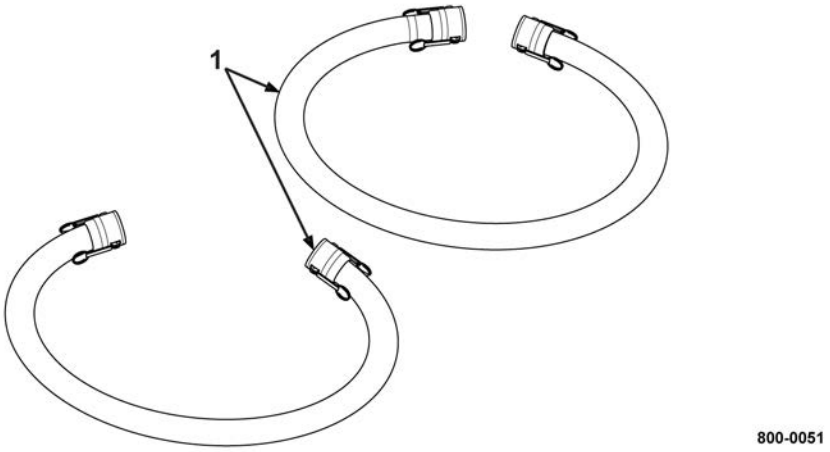
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 6. Dispensing Stand Assembly (Before Interval).	
7	Before		Dispensing Hose	1. Check dispensing hoses (Figure 7, Item 1) for cracks, damage, or missing parts.	
				 Figure 7. Dispensing Hose (Before Interval).	
8	Before		Water Tank Mounting Pin	**NOTE** There are four water tank mounting pins, one on each corner of tank. 1. Check water tank mounting pins (Figure 8, Item 1) for damaged, loose, or missing	If damaged, loose, or missing parts.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				parts. Ensure water tank mounting pins are in good condition.	

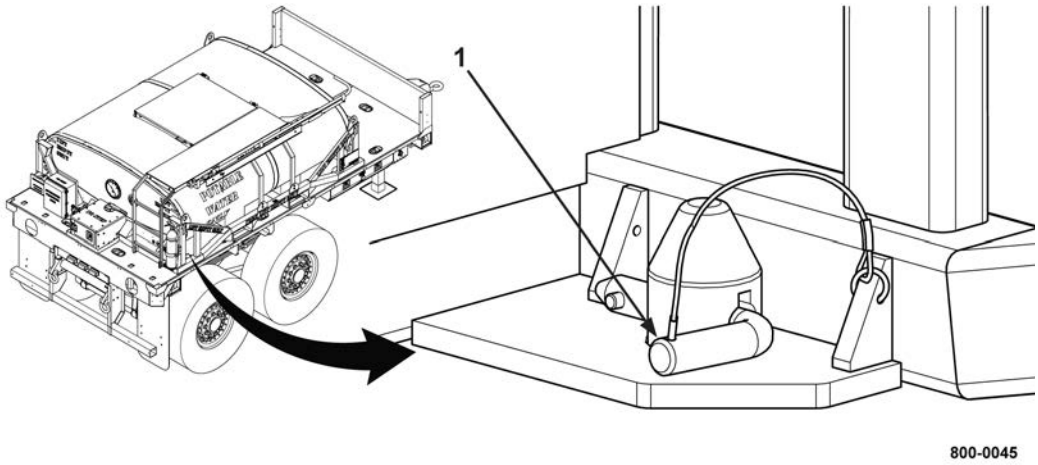


Figure 8. Water Tank Mounting Pins (Before Interval).

9	Before		Stowage Box Bottom Panel	1. Inspect stowage box bottom panel (Figure 9, Item 1) and check for damaged, loose, or missing parts.	

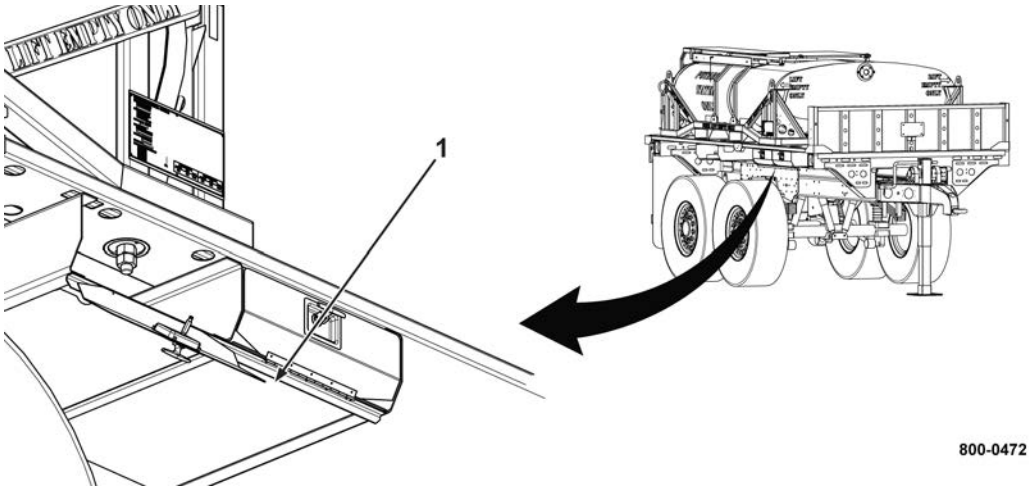


Figure 9. Stowage Box Bottom Panel (Before Interval).

10	Before		Catwalk/Handrail	**NOTE** Operation with damaged catwalk/ handrail may violate AR-385-10.	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				1. Check catwalk (Figure 10, Item 1) and handrail (Figure 10, Item 2) for damaged, loose, or missing parts. Check operation of handrail and latch (WP 0007).	

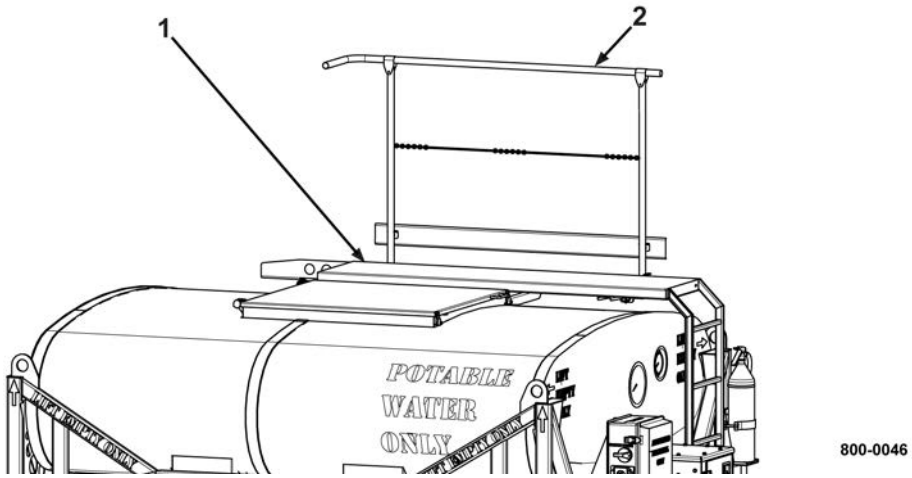


Figure 10. Catwalk/Handrail (Before Interval).

11	Before		Spill Box Assembly	1. Check spill box assembly (Figure 11, Item 1) for damaged, loose, or missing parts. Check operation of spill box locking arm (Figure 11, Item 2) and spill box lid (Figure 11, Item 3).	

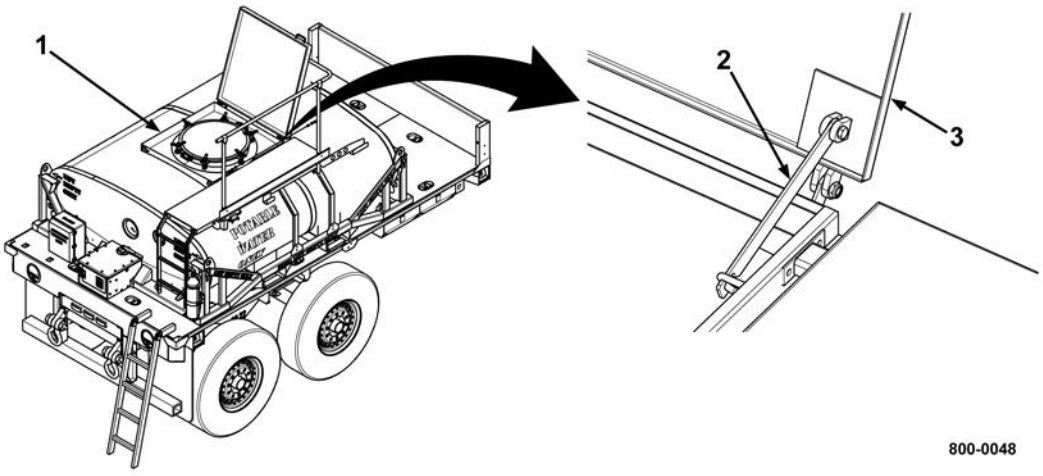


Figure 11. Spill Box Assembly (Before Interval).

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Before		Manhole Cover and Seal	**WARNING** • To avoid muscle strain or back injury, stand and lift manhole cover when closing. • Failure to comply may result in personal injury. 1. Check manhole cover (Figure 12, Item 1) and mounting hardware for damaged, loose, or missing parts. Open manhole cover (Figure 12, Item 1). Check manhole cover seal (Figure 12, Item 2) for cracking, contamination, or missing manhole cover seal. 2. Close and secure manhole cover.	Manhole cover or mounting hardware damaged, loose, or missing parts. Manhole cover seal cracked, contaminated, or missing.
13	Before		Relief Valve Assemblies	1. Inspect relief valve assemblies (Figure 13, Item 1) for damaged, loose, or missing parts.	If damaged or missing parts that prevents proper operation.

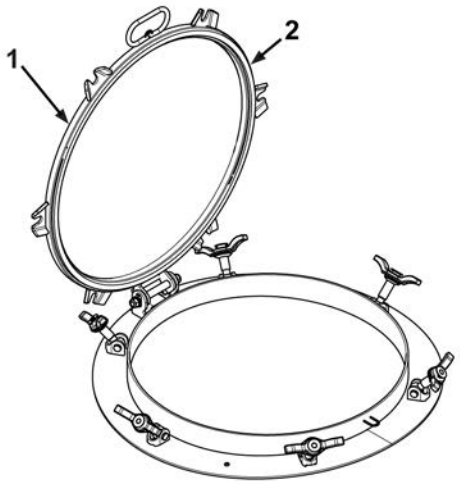


Figure 12. Manhole Cover and Seal (Before Interval).

Table 1. PMCS Procedures - Continued

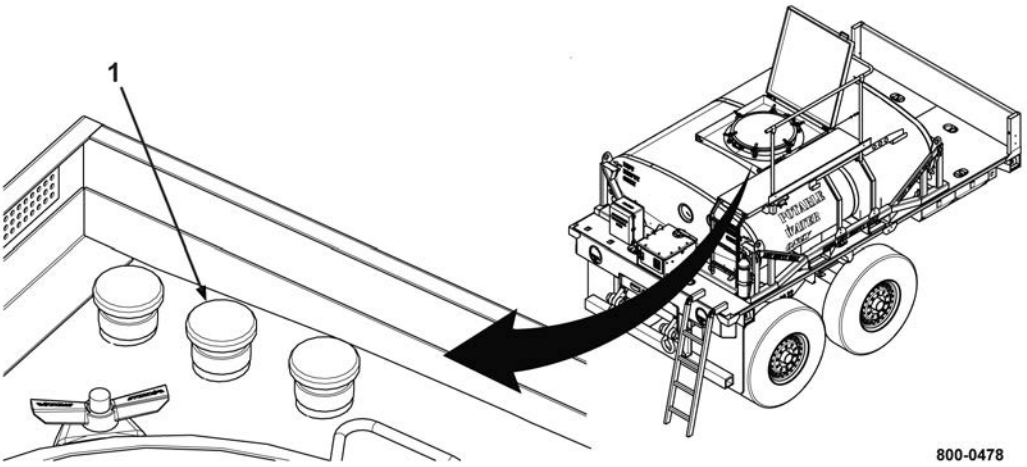
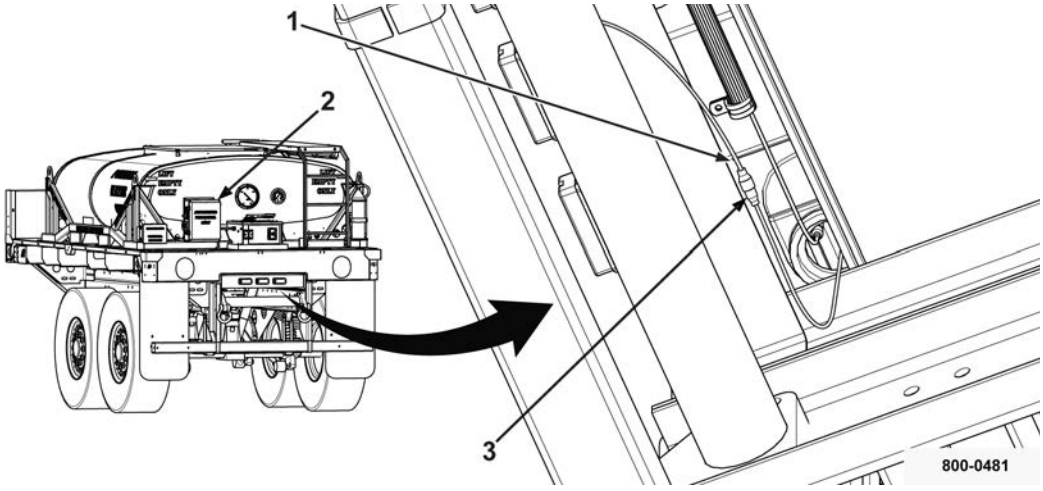
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 13. Relief Valve Assemblies (Before Interval).	
14	Before		Wiring Assemblies	1. Look under rear of trailer and find wiring assemblies (Figure 14, Item 1) coming down from electrical control box (Figure 14, Item 2). 2. Trace wiring assemblies and check for any visible cracks in wires or disconnected or loose connector plugs (Figure 14, Item 3).	
				 Figure 14. Wiring Assemblies (Before Interval).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
15	Before		Discharge Box	1. Inspect discharge box (Figure 15, Item 1) for any damaged, loose, or missing parts. 2. Inspect discharge housing deck skirt (Figure 15, Item 2) and check for cracks or missing rivets. 3. Inspect main dispensing valve handle (Figure 15, Item 3) for any damaged, loose, or missing parts. 4. Inspect dispensing port (Figure 15, Item 4) and seal (Figure 15, Item 5) to ensure that it is free from damage or obstruction and that end cap (Figure 15, Item 6) is present.	If damaged or missing parts that prevents dispensing valve handle from operating. If class III leakage evident.
16	Before		Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve	1. Check water level indicator (Figure 16, Item 1) and water temperature indicator (Figure 16, Item 2) for loose, damaged, or missing parts. 2. Rotate main dispensing valve (Figure 16, Item 3), open then close. Check for loose, damaged, or missing parts.	If class III leakage evident. If class III leakage evident.

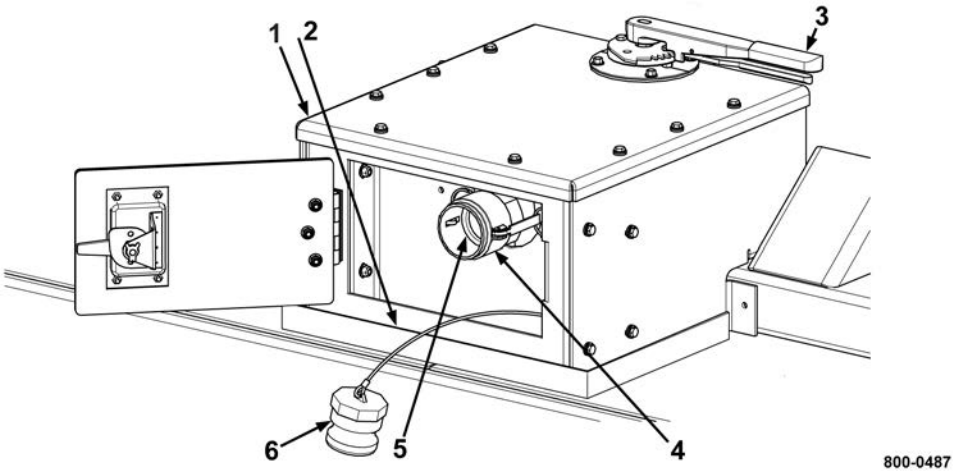


Figure 15. Discharge Box (Before Interval).

Table 1. PMCS Procedures - Continued

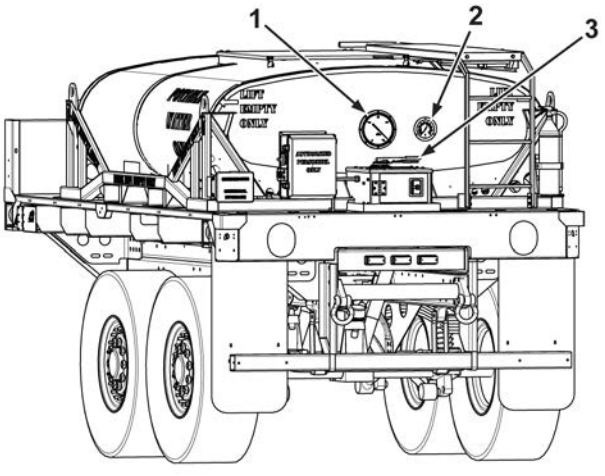
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 16. Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve (Before Interval).	
17	Before		Electrical Control Box	1. Inspect inside and outside of electrical control box (Figure 17, Item 1) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				2. Inspect external power plug (Figure 17, Item 2) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				3. Inspect main power switch (Figure 17, Item 3) for damaged, loose, or missing parts. Rotate main power switch on and off. **NOTE** If outside temperature is below 45°F (7.2°C), a 240 VAC single phase power source must be connected to Camel II, then proceed to Step 4.	If damage prevents operations below 32°F.
				4. Connect power source. Turn main power switch (Figure 17, Item 3) ON. Depress GFCI circuit breaker test button (Figure 17, Item 4) and observe if GFCI breaker bar (Figure 17, Item 5) trips to lower position. Reset GFCI breaker bar (WP 0053) by lowering then pushing to UP position.	If any damage that prevents operations below 32°F.

Table 1. PMCS Procedures - Continued

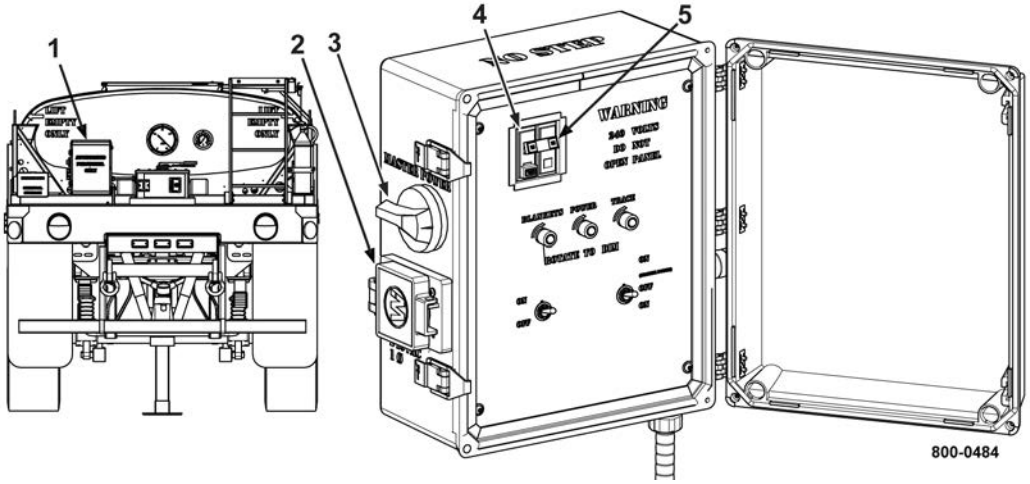
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 17. Electrical Control Box (Before Interval).	
18	During		Front Flange	**NOTE** • After performing DURING PMCS, ensure all BII items are stored. Return system to original operating condition. • Refer to Operation Under Usual Conditions - Operating Procedures (WP 0005) to fill tank before performing DURING PMCS. • DURING PMCS should be performed with full tank. 1. Inspect front flange (Figure 18, Item 1) for leaks.	If class III leakage evident.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

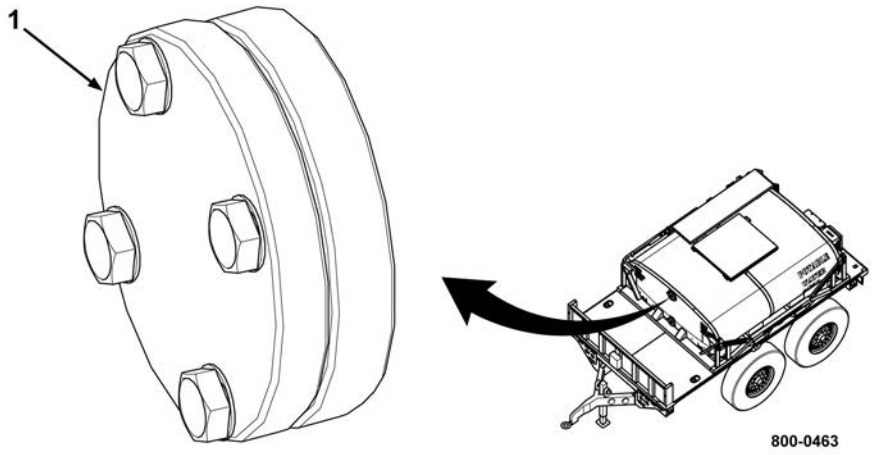


Figure 18. Front Flange (During Interval).

19	During		Water Tank	1. Check inside of water tank (Figure 19, Item 1) for contamination. 2. Inspect water tank outer shell (Figure 19, Item 2) for gouges, holes, or leaks. 3. Inspect water tank frame (Figure 2, Item 3) for obvious damage or cracked welds.	Inside water tank is contaminated. If any damage that prevents operation. If class III leakage evident.

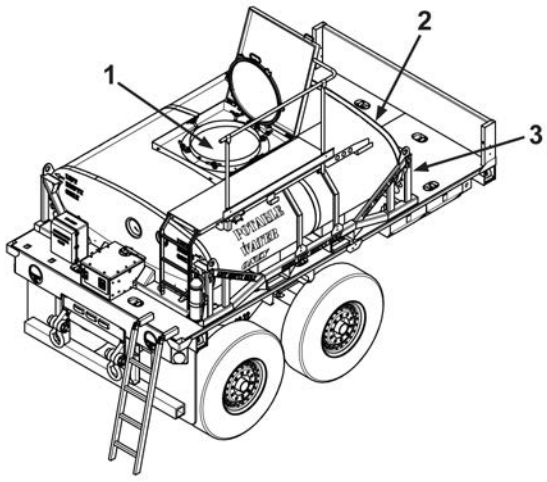


Figure 19. Water Tank (During Interval).

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
20	During		Single Point Dispensing System	1. Inspect single point dispensing system (Figure 20, Item 1) for proper operation and leaks.	If any damage that prevents operations below 32°F. If class III leakage evident.

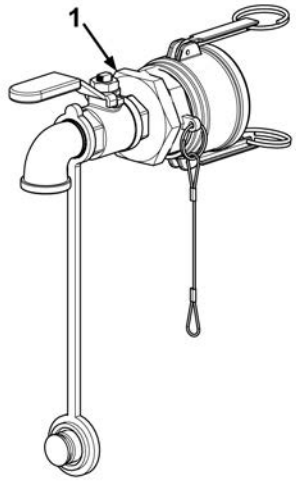


Figure 20. Single Point Dispensing System (During Interval).

21	During		Six Point Dispensing System	1. Inspect six point dispensing system (Figure 21, Item 1) for proper operation and leaks.	If all six dispensing valves are not operational. If class III leakage is evident.

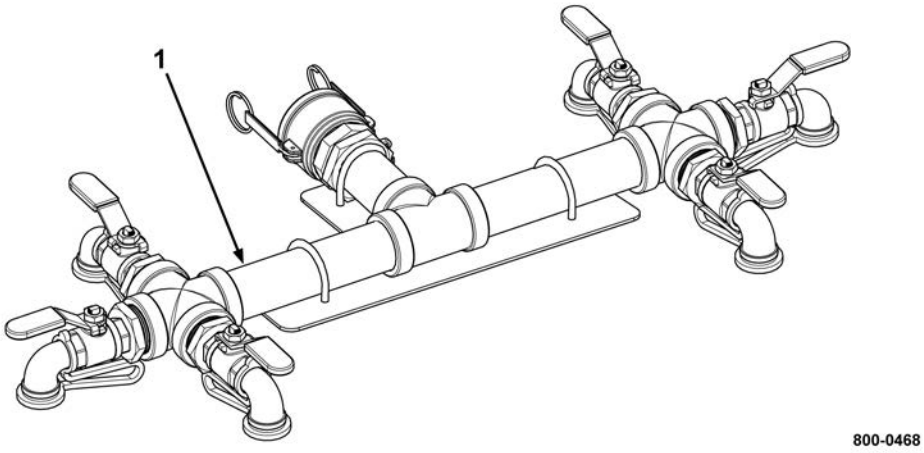


Figure 21. Six Point Dispensing System (During Interval).

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
22	During		Dispensing Support Trailer Mount Bracket	1. Inspect trailer bracket (Figure 22, Item 1) from for damaged, loose, or missing parts.	If damaged or missing parts prevent operation.

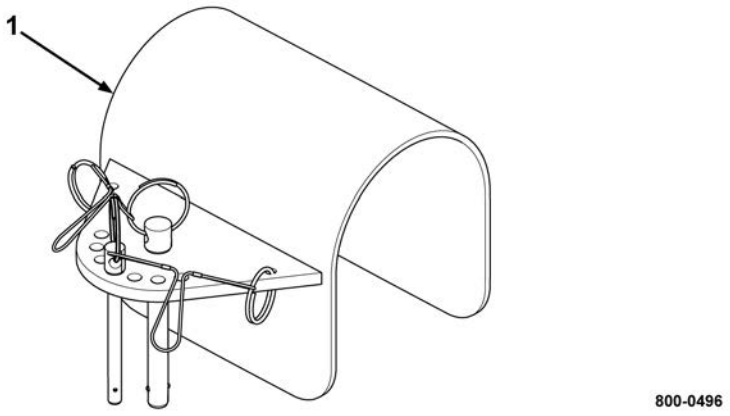


Figure 22. Dispensing Support Trailer Mount Bracket (During Interval).

23	During		Dispensing Stand Assembly	1. Inspect dispensing support stand (Figure 24, Item 1) for damaged, loose, or missing parts.	

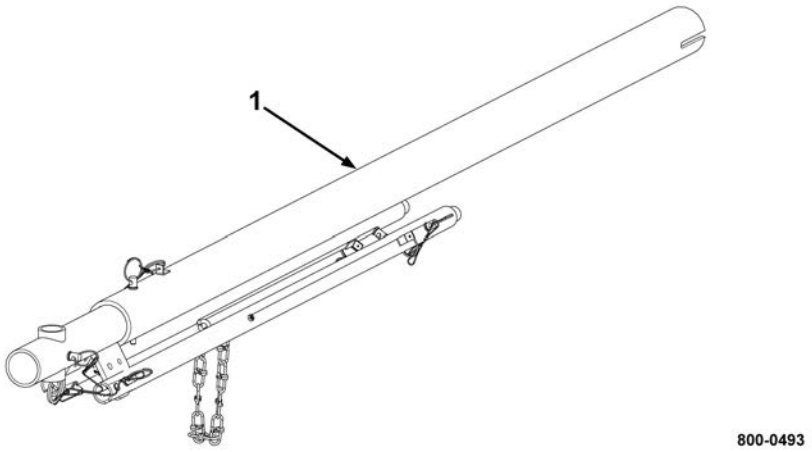


Figure 23. Dispensing Stand Assembly (During Interval).

24	During		Dispensing Hose	1. Check hoses (Figure 23, Item 1) for leaks, cracks, damage, or missing parts.	

Table 1. PMCS Procedures - Continued

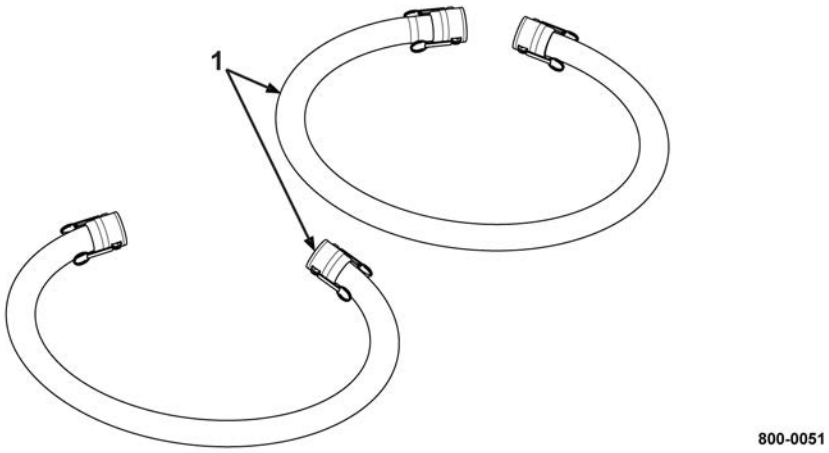
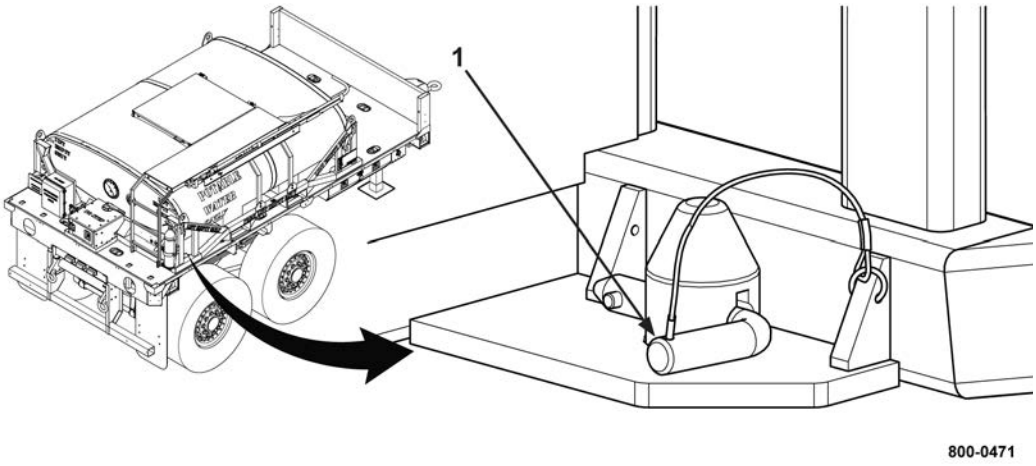
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 24. Dispensing Hose (During Interval).	
25	During		Water Tank Mounting Pin	**NOTE** There are four water tank mounting pins, one on each corner of tank. 1. Check water tank mounting pins (Figure 25, Item 1) for damaged or missing parts. Ensure water tank mounting pins are in good condition.	If damaged or missing parts.
				 Figure 25. Water Tank Mounting Pins (During Interval).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
26	During		Stowage Box Bottom Panel	1. Inspect stowage box bottom panel (Figure 26, Item 1) and check damaged, loose, or missing parts.	

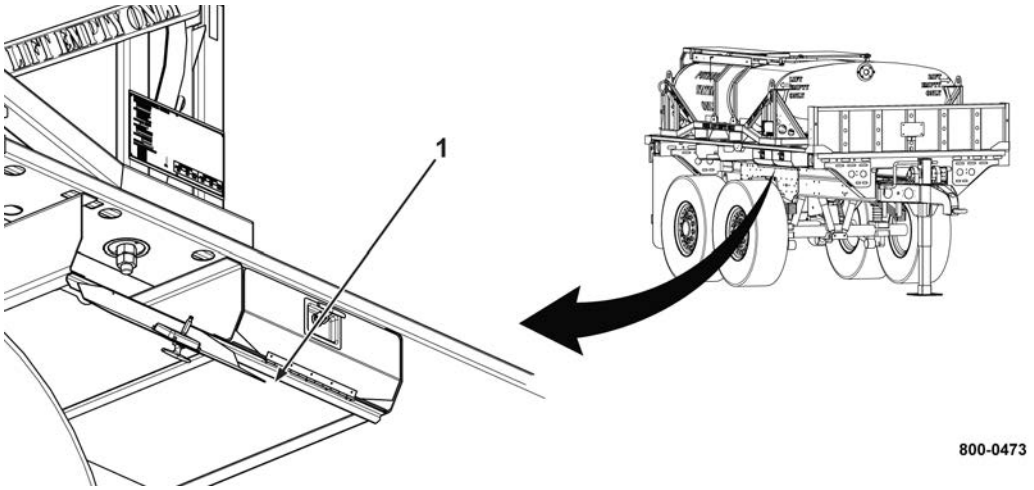


Figure 26. Stowage Box Bottom Panel (During Interval).

27	During		Catwalk/Handrail	**NOTE** Operation with damaged catwalk/ handrail may violate AR-385-10. 1. Check catwalk (Figure 27, Item 1) and handrail (Figure 27, Item 2) for damaged, loose, or missing parts. Check operation of handrail and latch (WP 0007).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

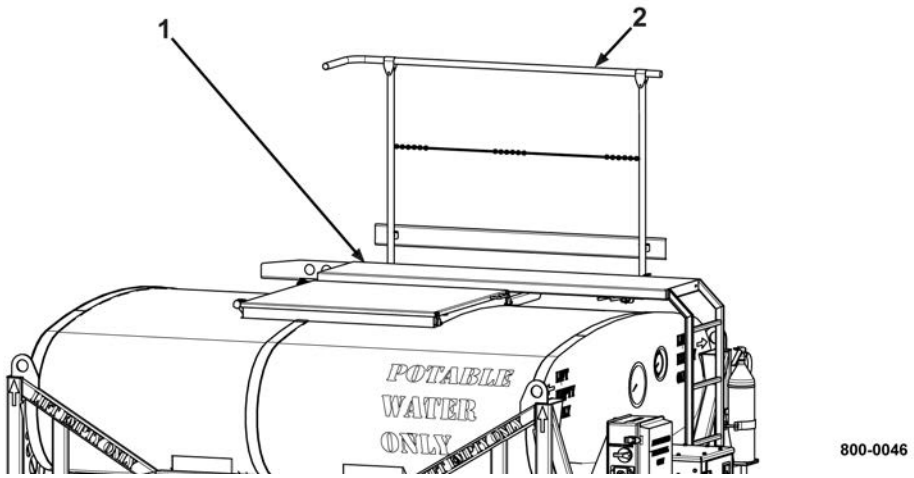


Figure 27. Catwalk/Handrail (During Interval).

28	During		Spill Box Assembly	1. Check spill box assembly (Figure 28, Item 1) for damaged, loose, or missing parts. Check operation of spill box locking arm (Figure 28, Item 2) and spill box lid (Figure 28, Item 3). Close spill box lid.	

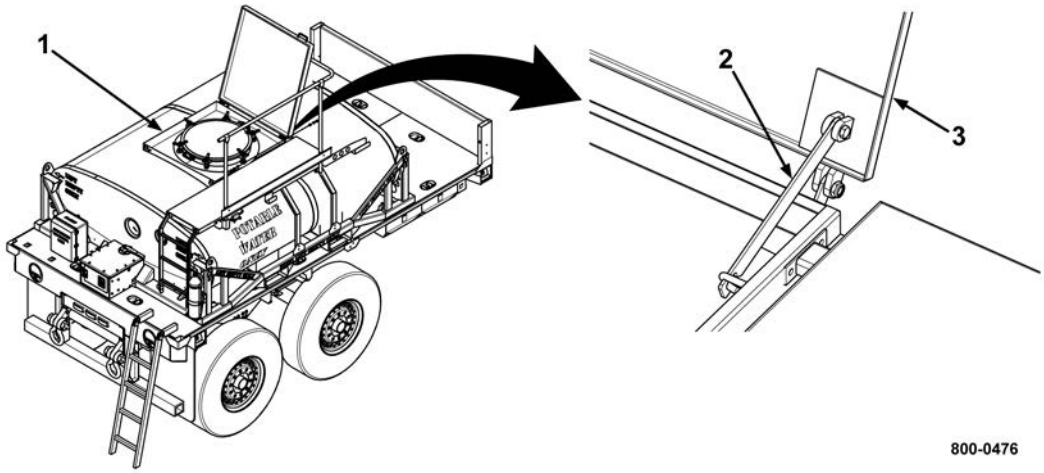


Figure 28. Spill Box Assembly (During Interval).

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
29	During		Manhole Cover and Seal	**WARNING** • To avoid muscle strain or back injury, stand and lift manhole cover when closing. • Failure to comply may result in personal injury. 1. Check manhole cover (Figure 29, Item 1) and mounting hardware for damaged, loose, or missing parts. Open manhole cover (Figure 29, Item 1). Check manhole cover seal (Figure 29, Item 2) for cracking, contamination, or missing manhole cover seal. 2. Close and secure manhole cover.	Manhole cover or mounting hardware damaged, loose, or missing parts. Manhole cover seal cracked, contaminated, or missing.
30	During		Relief Valve Assemblies	1. Inspect relief valve assemblies (Figure 30, Item 1) for damaged, loose, or missing parts.	If damaged or missing parts that prevents operations.

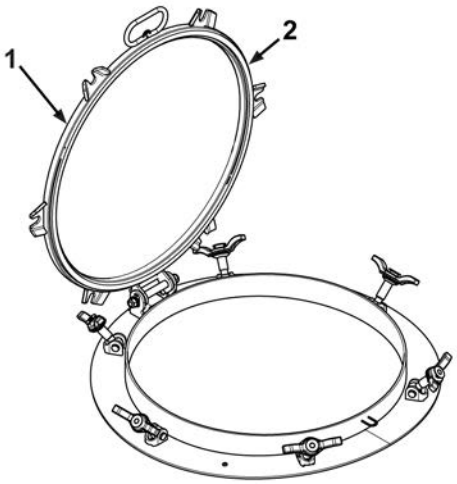


Figure 29. Manhole Cover and Seal (During Interval).

Table 1. PMCS Procedures - Continued

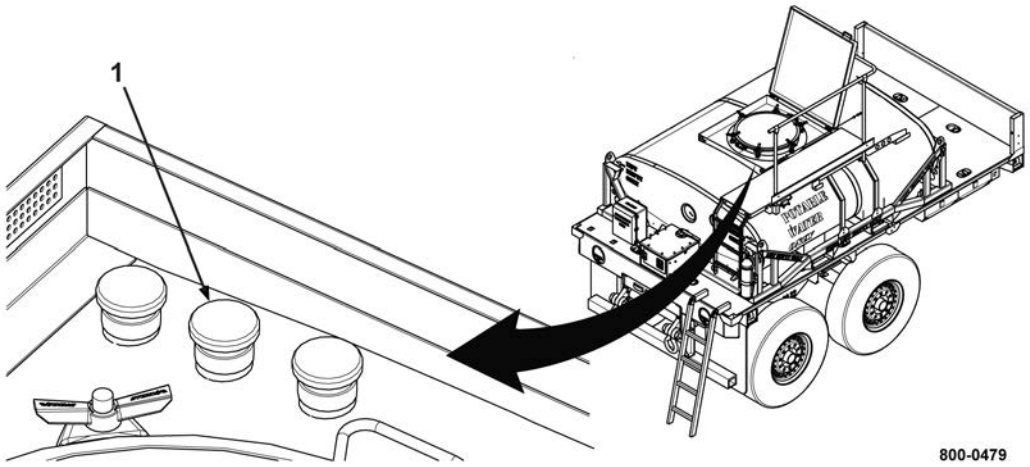
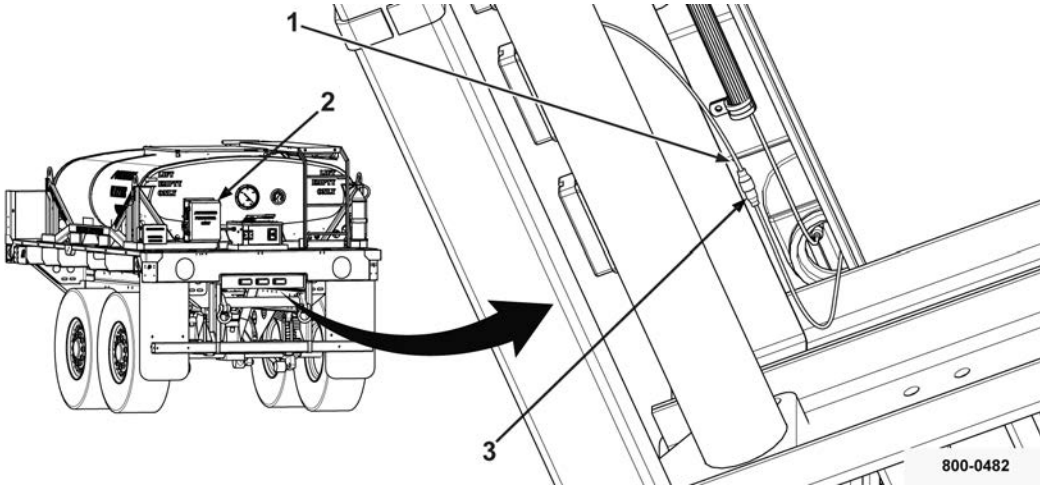
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 30. Relief Valve Assemblies (During Interval).	
31	During		Wiring Assemblies	1. Look under rear of trailer and find wiring assemblies (Figure 31, Item 1) coming down from electrical control box (Figure 31, Item 2).	
				 Figure 31. Wiring Assemblies (During Interval).	
				2. Trace wiring assemblies and check for any visible cracks in wires or disconnected or loose connector plugs (Figure 31, Item 3).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
32	During		Discharge Box	1. Inspect discharge box for leaks (Figure 32, Item 1). 2. Inspect dispensing port (Figure 32, Item 2) for leaks.	If class III leakage evident. If class III leakage evident.

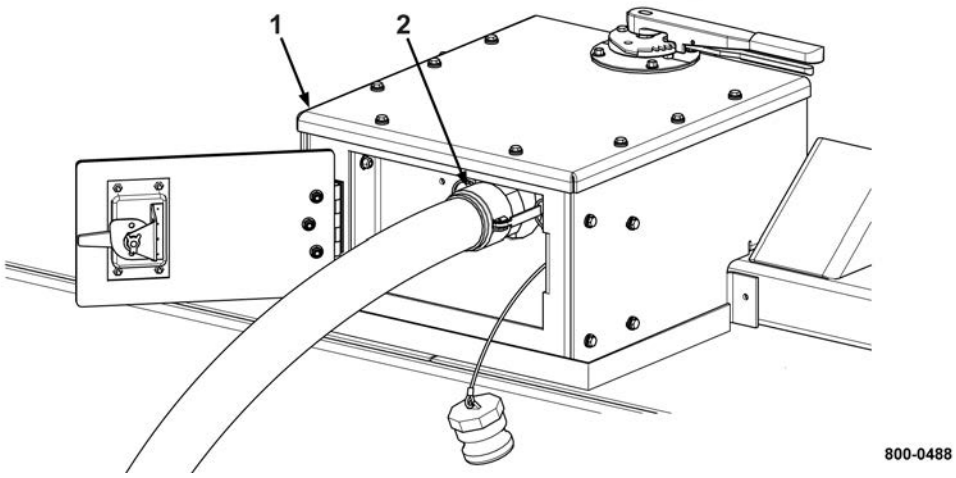


Figure 32. Discharge Box (During Interval).

33	During		Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve	1. Check water level indicator (Figure 33, Item 1) and water temperature indicator (Figure 33, Item 2) for proper operation. 2. Check main dispensing valve (Figure 33, Item 3) for proper operation and leaks.	 If class III leakage evident.

Table 1. PMCS Procedures - Continued

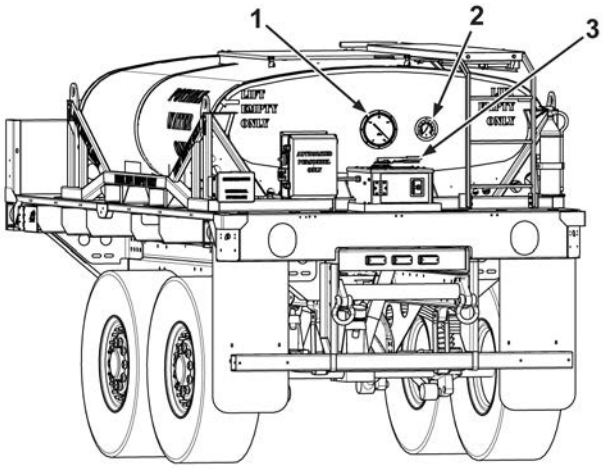
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
					
				Figure 33. Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve (During Interval).	
34	During		Electrical Control Box	1. Inspect inside and outside of electrical control box (Figure 34, Item 1) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				2. Inspect external power plug (Figure 34, Item 2) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				3. Inspect main power switch (Figure 34, Item 3) for damaged, loose, or missing parts. Rotate main power switch on and off.	If damage prevents operations below 32°F.
				NOTE If outside temperature is below 45°F (7.2°C), a 240 VAC single phase power source must be connected to Camel II, then proceed to Step 4.	
				4. Connect power source. Turn main power switch (Figure 34, Item 3) ON. Depress GFCI circuit breaker test button (Figure 34, Item 4) and observe if GFCI breaker bar (Figure 34, Item 5) trips to lower position. Reset GFCI breaker bar (WP 0053) by lowering then pushing to UP position.	If damage prevents operations below 32°F.

Table 1. PMCS Procedures - Continued

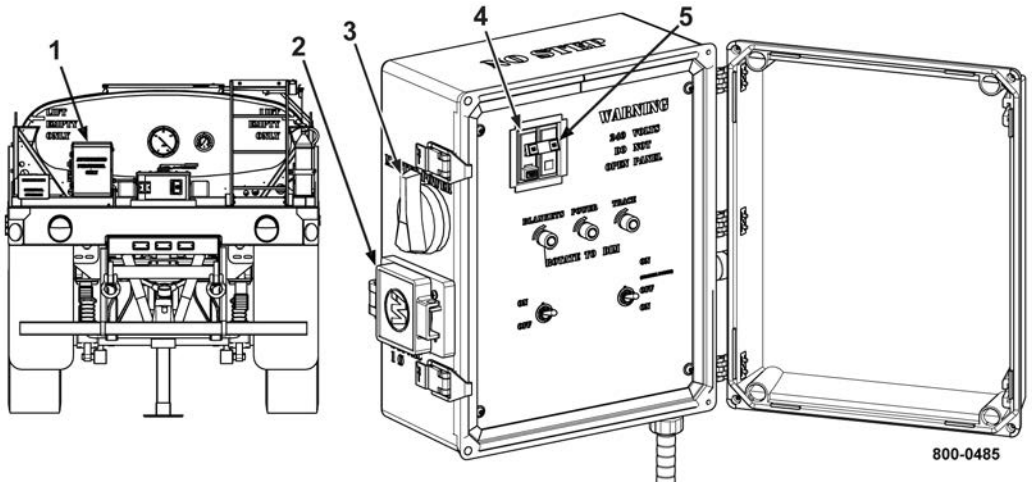
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 34. Electrical Control Box (During Interval).	
35	After		Front Flange	**NOTE** • After performing AFTER PMCS, ensure all BII items are stored. Return system to original operating condition. • Refer to Operation Under Usual Conditions - Operating Procedures (WP 0005) to drain tank before performing AFTER PMCS. • AFTER PMCS should be performed with drained tank. 1. Visually inspect front flange (Figure 35, Item 1) for any damaged or missing parts.	If class III leakage evident.

Table 1. PMCS Procedures - Continued

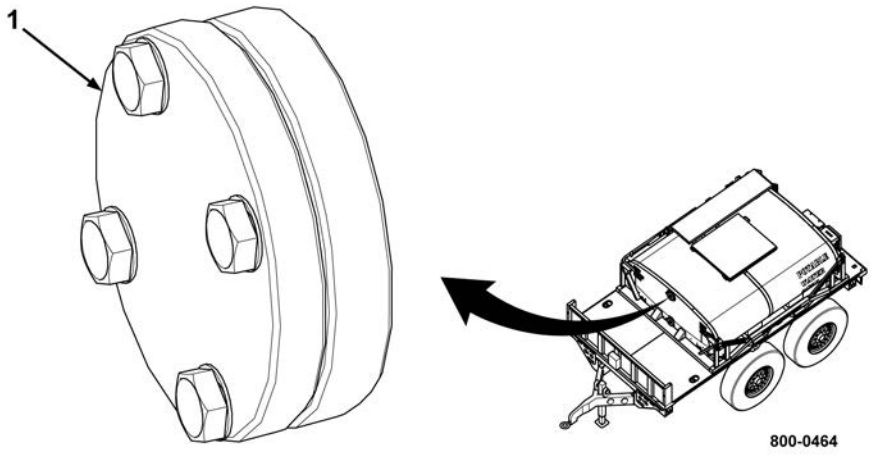
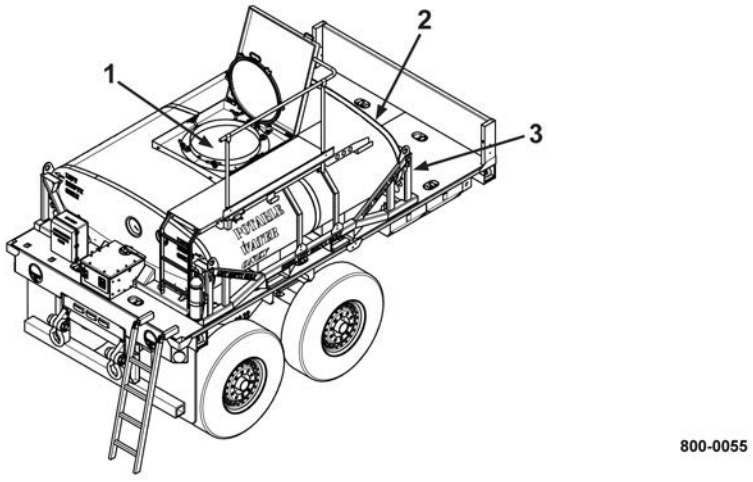
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 35. Front Flange (After Interval).	
36	After		Water Tank	1. Inspect water tank outer shell (Figure 36, Item 2) for damage, loose, missing parts, gouges, or holes. 2. Inspect water tank frame (Figure 36, Item 3) for obvious damage or cracked welds. 3. Check inside of water tank (Figure 36, Item 1) for discoloration, stains, contamination, or damage.	If damage prevents operations. If damage prevents operations. Inside water tank is contaminated or damaged.
				 Figure 36. Water Tank (After Interval).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
37	After		Water Tank Mounting Pin	**NOTE** There are four water tank mounting pins, one on each corner of tank. 1. Check water tank mounting pins (Figure 37, Item 1) for damaged or missing parts. Ensure water tank mounting pins are in good condition.	If damaged, loose, or missing parts.

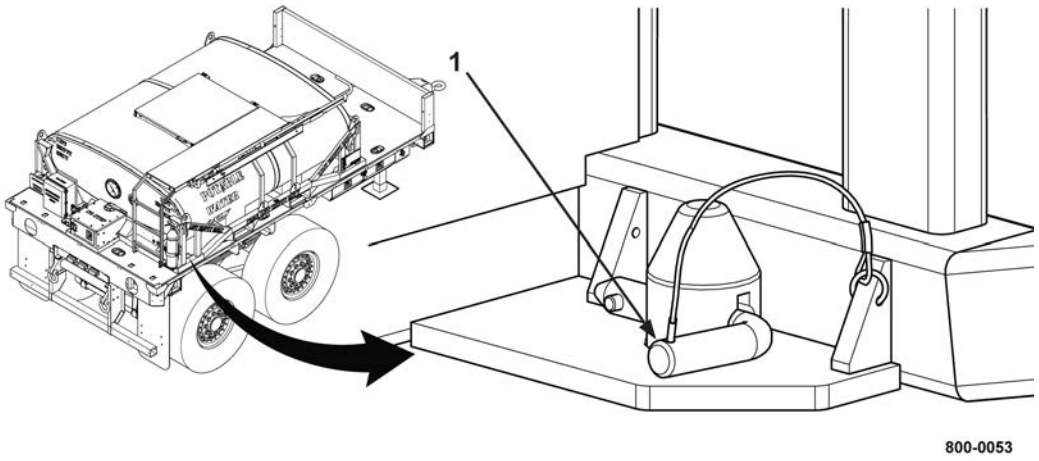


Figure 37. Water Tank Mounting Pins (After Interval).

38	After		Stowage Box Bottom Panel	1. Inspect stowage box bottom panel (Figure 38, Item 1) and check for damaged, loose, or missing parts.	

Table 1. PMCS Procedures - Continued

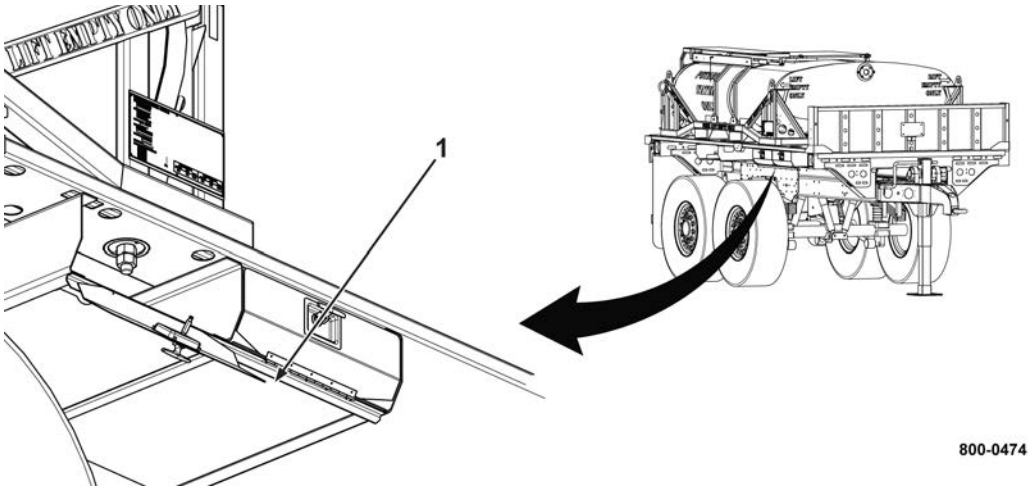
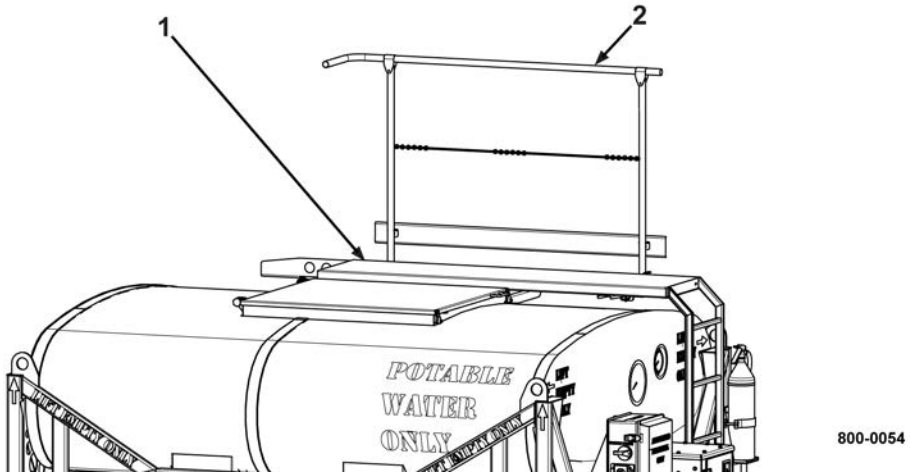
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
					
				Figure 38. Stowage Box Bottom Panel (After Interval).	
39	After		Catwalk/Handrail	**NOTE** Operation with damaged catwalk/ handrail may violate AR-385-10. 1. Check catwalk (Figure 39, Item 1) and handrail (Figure 39, Item 2) for damaged, loose, or missing parts. Check operation of handrail and latch (WP 0007).	
					
				Figure 39. Catwalk/Handrail (After Interval).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
40	After		Spill Box Assembly	**WARNING** • To avoid muscle strain or back injury, stand and lift manhole cover when closing. • Failure to comply may result in personal injury. 1. Check spill box assembly (Figure 40, Item 1) for damaged, loose, or missing parts. Check operation of spill box locking arm (Figure 40, Item 2) and spill box lid (Figure 40, Item 3).	

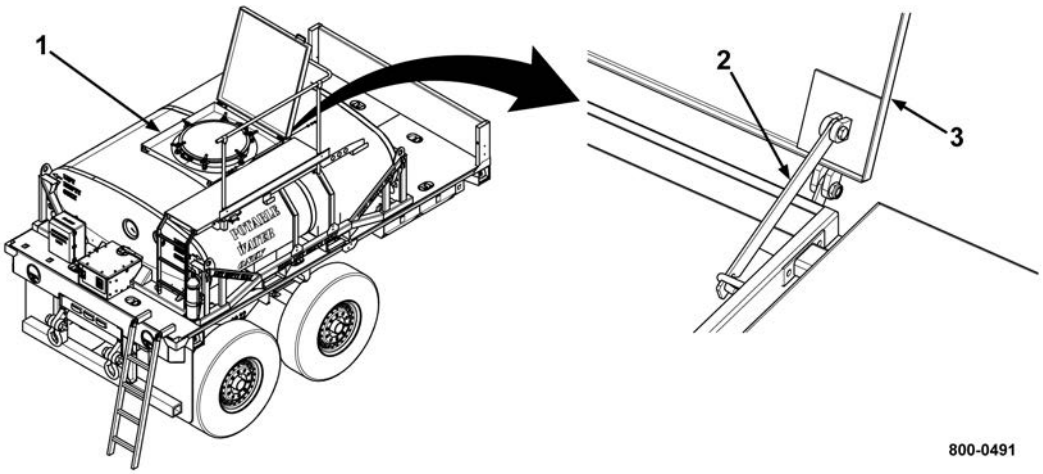


Figure 40. Spill Box Assembly (After Interval).

41	After		Manhole Cover and Seal	**WARNING** • To avoid muscle strain or back injury, stand and lift manhole cover when closing. • Failure to comply may result in personal injury. 1. Check manhole cover (Figure 41, Item 1) and mounting hardware for damaged, loose, or missing parts. Open manhole cover (Figure 41, Item 1). Check manhole cover seal (Figure 41, Item 2) for cracking, contamination, or missing manhole cover seal.	Manhole cover or mounting hardware damaged, loose, or missing parts. Manhole cover seal cracked, contaminated, or missing.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				2. Close and secure manhole cover.	

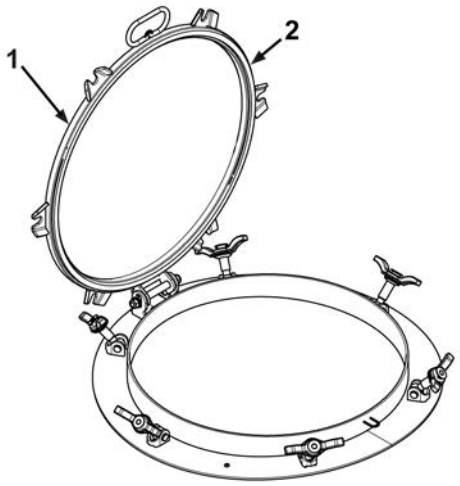


Figure 41. Manhole Cover and Seal (After Interval).

42	After		Relief Valve Assemblies	1. Inspect relief valve assemblies (Figure 42, Item 1) for damaged, loose, or missing parts.	If damaged or missing parts that prevents operations.

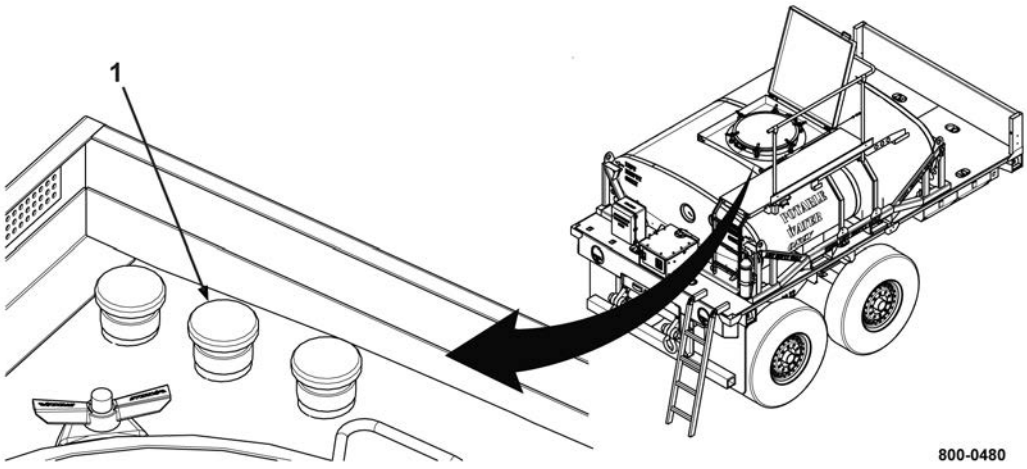


Figure 42. Relief Valve Assemblies (After Interval).

43	After		Wiring Assemblies	1. Look under rear of trailer and find wiring assemblies (Figure 43, Item 1) coming down from electrical control box (Figure 43, Item 2).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				2. Trace wiring assemblies and check for any visible cracks in wires or disconnected or loose connector plugs (Figure 43, Item 3).	

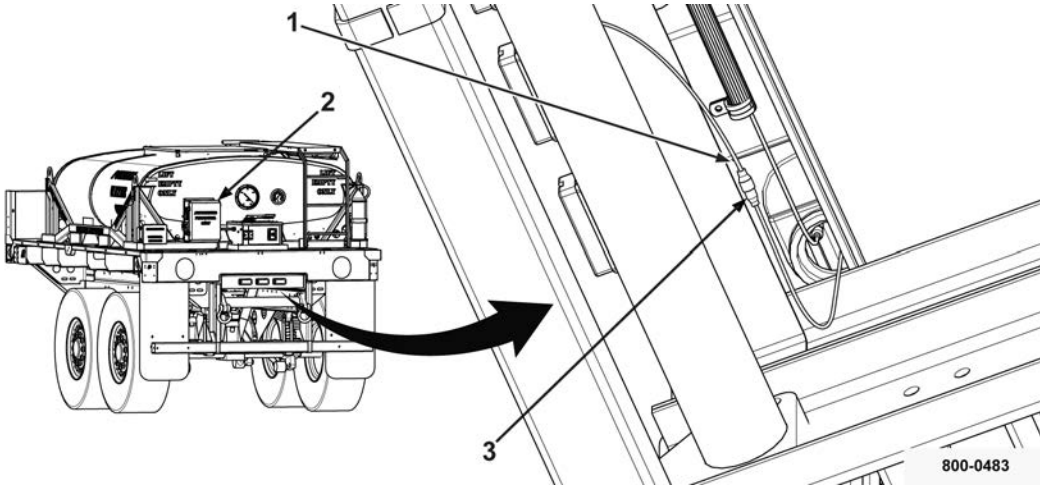


Figure 43. Wiring Assemblies (After Interval).

44	After		Discharge Box	1. Inspect discharge box for any damaged, loose, or missing parts (Figure 44, Item 1).	
				2. Inspect discharge housing deck skirt (Figure 44, Item 2) and check for cracks or missing rivets.	
				3. Inspect main dispensing valve handle for any damaged, loose, or missing parts (Figure 44, Item 3).	If damaged or missing parts that prevents dispensing valve handle from operating.
				4. Inspect dispensing port (Figure 44, Item 4) and seal (Figure 44, Item 5) to ensure that it is free from damage or obstruction and that end cap (Figure 44, Item 6) is present or class III leakage is not evident.	If class III leakage evident.

Table 1. PMCS Procedures - Continued

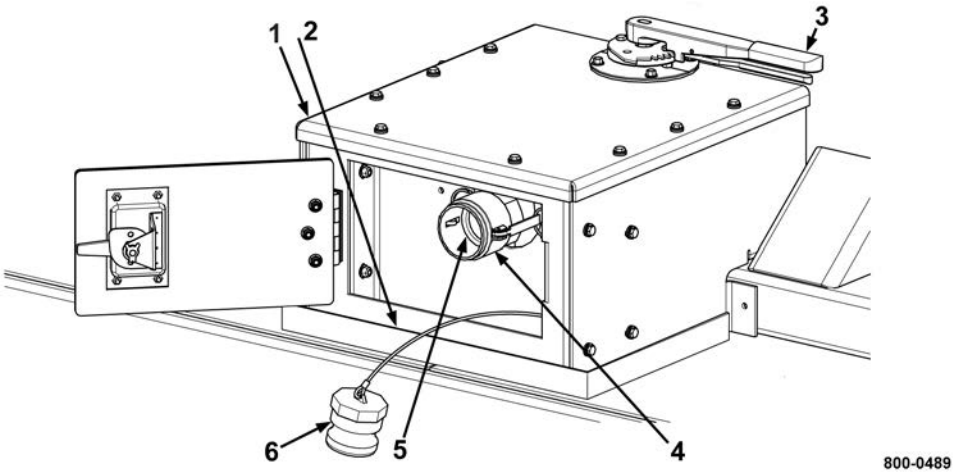
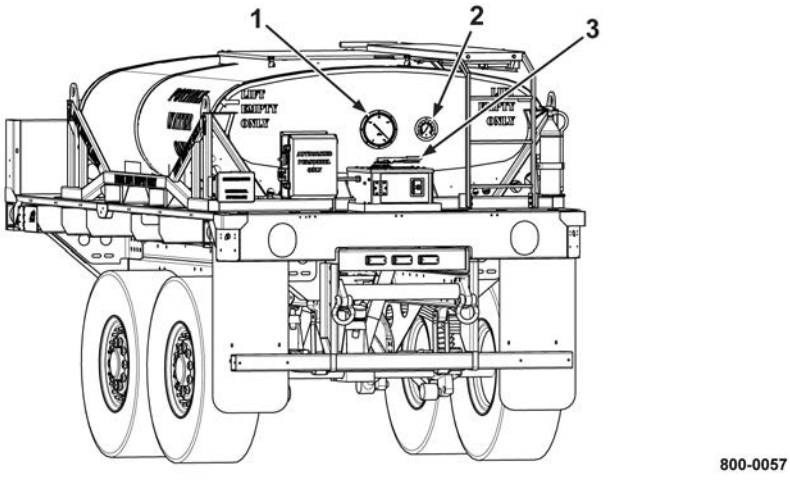
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 44. Discharge Box (After Interval).	
45	After		Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve	1. Check water level indicator (Figure 45, Item 1) and water temperature indicator (Figure 45, Item 2) for loose, damaged, or missing parts. 2. Rotate main dispensing valve (Figure 45, Item 3) open then close. Check for loose, damaged, or missing parts.	 If class III leakage evident.
				 Figure 45. Water Level Indicator, Water Temperature Indicator, Main Dispensing Valve (After Interval).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
46	After		Electrical Control Box	1. Inspect inside and outside of electrical control box (Figure 46, Item 1) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				2. Inspect external power plug (Figure 46, Item 2) for damaged, loose, or missing parts.	If damage prevents operations below 32°F.
				3. Inspect main power switch (Figure 46, Item 3) for damaged, loose, or missing parts. Rotate main power switch on and off. **NOTE** If outside temperature is below 45°F (7.2°C), a 240 VAC single phase power source must be connected to Camel II, then proceed to Step 4.	If damage prevents operations below 32°F.
				4. Connect power source. Turn main power switch (Figure 46, Item 3) ON. Depress GFCI circuit breaker test button, (Figure 46, Item 4) and observe if GFCI breaker bar (Figure 46, Item 5) trips to lower position. Reset GFCI breaker bar (WP 0053) by lowering then pushing to UP position.	If damage prevents operations below 32°F.

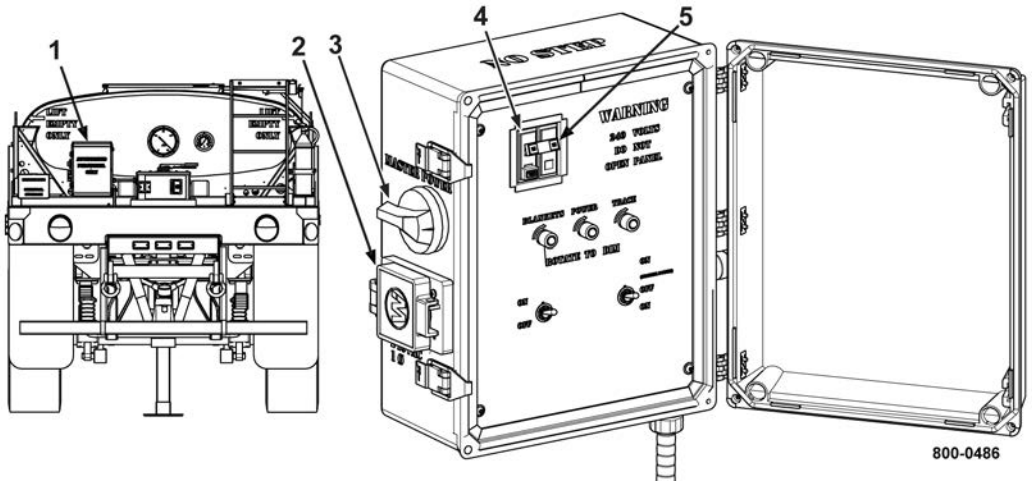


Figure 46. Electrical Control Box (After Interval).

47	Weekly		Outer Protective Shell	1. Check outer shell (Figure 47, Item 1) for gouges, holes, and loose rivets. Repair as needed. Clean with an external water	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				source if needed. Check spill box lid (Figure 47, Item 2) for damaged, loose, or missing parts.	

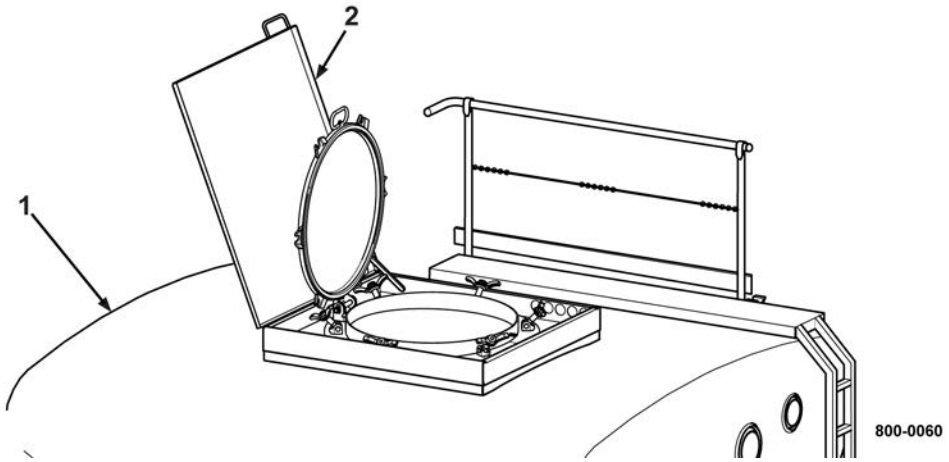


Figure 47. Outer Protective Shell.

48	Weekly		Spill Box Assembly	1. Check spill box (Figure 48, Item 1) for debris and contaminates. Clean with an external water source if needed. Check spill box lid (Figure 48, Item 3) and spill box locking arm (Figure 48, Item 2) for damaged, loose, or missing parts.	

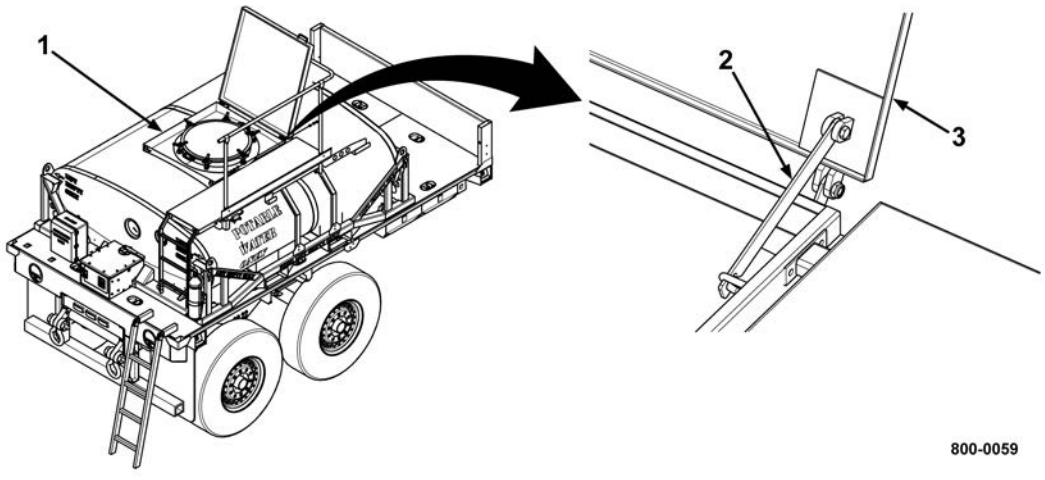


Figure 48. Spill Box Assembly (Weekly)

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
49	Monthly		Lubrication Instructions	**WARNING** Cleaning compound solvent, Type III, MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to comply may result in serious injury or death to personnel. 1. Clean area around lubrication points with cleaning compound solvent, Type III, MIL-PRF-680 Type III before lubricating equipment. Keep all external parts of equipment not requiring lubrication free of lubricants. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter. 2. Lightly lubricate all hinges, latches, handles, and exposed adjusting threads with OE/HDO monthly.	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

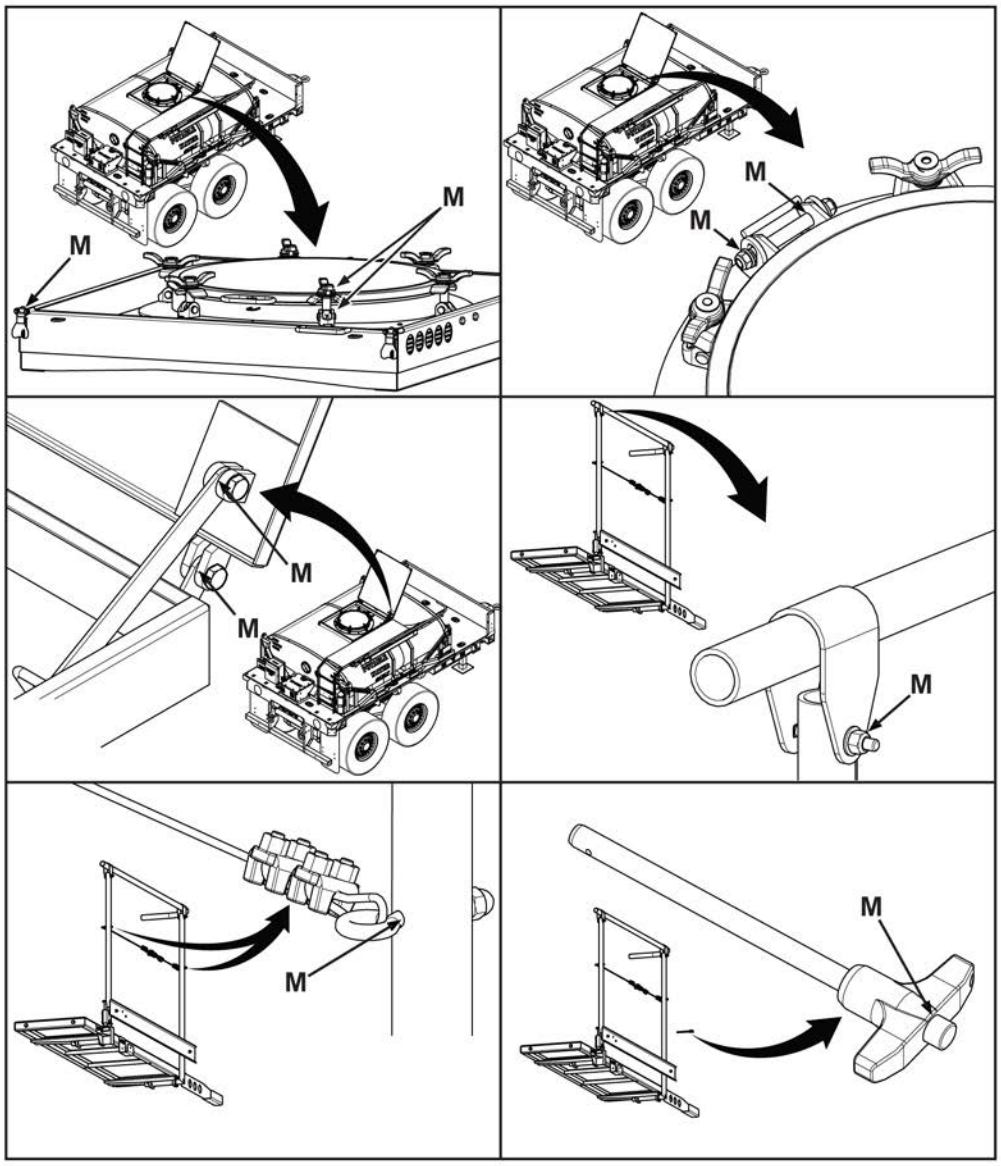


Figure 49. Lubricating Points.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

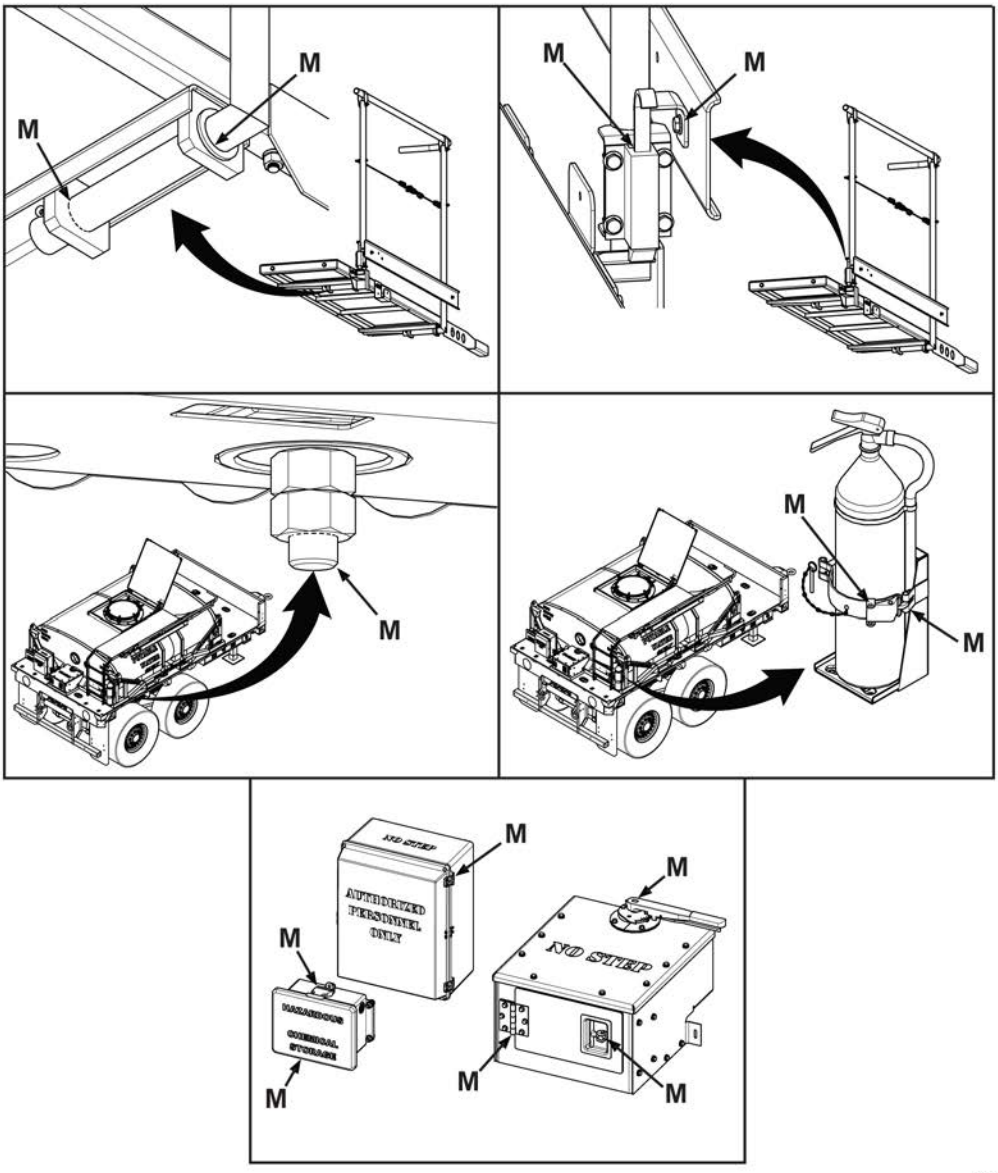


Figure 50. Lubricating Points. Continued.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MAINTENANCE INTRODUCTION

INITIAL SETUP:

References
TB 43-0242
TM 9-2330-394-13&P
WP 0188

INTRODUCTION

This section contains maintenance tasks that can be performed using the Basic Issue Items (BII) (WP 0188) located in Supporting Information. Before beginning a task, determine the amount of repair, modification, or replacement necessary to fix the equipment. Disassemble equipment only as far as necessary to repair or replace damaged or broken parts.

GENERAL MAINTENANCE INSTRUCTIONS

NOTE

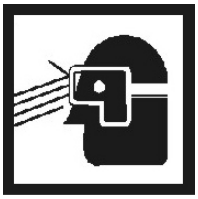
All general maintenance instructions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with general maintenance instructions for the trailer prior to performing any operation.

General Removal Instructions

1. **Work Required.** Remove parts if repair or replacement is required. Do not disassemble a component any further than necessary.
2. **Preparation.** Before removal of any electrical components, ensure system component is not energized. Disconnect Camel II from external power source. Before removal of fasteners (nuts, self-locking nuts) remove any paint on threads to prevent binding of fastener.
3. **Identification.** To ease assembly and installation, mark connectors, wires, and mating ends of lines before disconnecting them. Identify similar parts to ensure correct assembly.
4. **Position of Valves.** Before removing valve handles, mark or diagram their positions when open and closed. This will help during assembly.
5. **Location.** Before removing cable ties, cushion clamps, hoses, tubing, wiring, etc., note the location, position, and routing to ensure correct assembly.

General Removal Instructions - Continued

WARNING



Wear appropriate eye protection when drilling out rivets. Failure to comply may result in injury to personnel.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may cause damage to equipment.

6. **Rivet Removal.** Grind off the head of the rivet. Indent the center of the grounded area. Drill through the rivet head with a drill bit. Then lightly tap the head of the rivet with a drift punch. Be sure not to enlarge the hole, otherwise you will need to replace the rivet with a larger rivet. Drill out the remaining rivet, if necessary.

General Disassembly Instructions

1. **Cleanliness.** Work area must be as clean as possible to prevent contamination to components.

CAUTION

Self-locking fasteners that are loosened must be replaced, not tightened. Failure to comply may cause damage to equipment.

2. **Locking Parts.** Replace all lock washers, cotter pins, and self-locking nuts at time of reassembly.
3. **Expendable Parts.** All gaskets, preformed packing, and seals removed during repair must be discarded and replaced with new parts.
4. **Removing Seals.** Be sure all traces of oil, gaskets, and sealants are removed from components. When possible, use wood or plastic probes and scrapers to prevent damage to machined surfaces.
5. **Parts Protection.** To keep dust, dirt, moisture, and other objects out of internal parts of systems or components, cap or tape all open tubes, hoses, air lines, fittings, and component openings as soon as part is removed. Wrap all removed parts in clean paper or dip parts in preservation oil.

General Inspection Instructions

1. **Cleaning.** Clean all parts before inspection. Check for defects such as physical distortion, wear, cracks, and pitting.
2. **Sealing Surfaces.** Inspect all surfaces in contact with gaskets, preformed packing, or seals for nicks and burrs. If any defect is found, remove before assembly.
3. **Tubing and Hoses.** Inspect all hose surfaces for broken or frayed fabric. Check for breaks caused by sharp kinks or contact with other parts. Inspect fitting threads and mating surfaces for damage. Replace any defective part. After assembly and during initial operation period, check for leaks.
4. **Electrical Parts.** Inspect all wiring harnesses for broken, chafed, or burned wiring. Inspect all terminal connectors for loose connections and broken parts.

General Inspection Instructions - Continued

5. **Metal Parts.** Visually inspect all castings and weldment for cracks. Parts that carry a great load should receive magnetic particle inspection. Critical nonferrous parts may be inspected with fluorescent penetrant.

General Repair Instructions

1. **Burrs.** Remove burrs from surface area or threads with a fine-cut file or crocus cloth.
2. **Exterior Parts.** Chassis and exterior painted parts may be resurfaced when paint is damaged or where parts have been repaired. Refer to TB 43-0242 Chemical Agent Resistant Coating (CARC) Spot Painting.

NOTE

Polished and machined steel parts not protected by cadmium, tin, copper, or other plating or surface treatment require protection. Bare metal parts must be free of moisture when protective coating is applied.

3. **Protecting Parts.** Protect bare steel surfaces from rust when not actually undergoing repair work. Dip parts in, or spray them with, corrosion preventive compound. Aluminum parts may require protection in atmospheres having a high salt content.
4. **Screws, Nuts, and Fittings.** Replace any screw, nut, or fitting with damaged threads. Inspect tapped holes for thread damage. If cross-threading is evident re-tap the hole for the next oversize screw or stud. If re-tapping will weaken the part or if the cost of the part makes re-tapping impractical, replace the part. Chasing the threads with proper size tap or die may be adequate.
5. **Dents.** Straighten minor body dents by tapping with a soft-faced hammer, using a wooden block backing.
6. **Sheet Metal Repair.** Repair minor skin cracks by installing patches.
7. **Wire Repair.** Replace all broken, worn, or burned electrical wiring. Wires with several broken strands must be replaced. Broken strands will increase the resistance of the wire and impair efficiency of electrical components. Wire numbers must be permanently identified on any new wiring.

General Assembly Instructions

1. **Preparation.** Remove protective grease coatings from new parts before installation.
2. **Pipe Joints and Fittings.** Use non-hardening sealing compound to join piping and fittings.
3. **Gaskets.** Remove all traces of previous gasket and sealant before installing new gasket. Coat both sides of gasket with sealant to provide added sealing.

General Installation Instructions

1. **Preparation.** When unpacking items, remove all packing material, barrier paper, tape, plastic bags, protective caps, and protective grease coatings. Handle and store removed components carefully.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound to hose connections. Failure to comply may result in damage to equipment.

2. **Sealing Compounds.** Use sealing compounds as required in each maintenance task.
3. **Torquing.** Tighten nuts, bolts, screws, and fittings as required in each maintenance task.
4. **Identification Tags.** Put hoses, tubes, lines, and electrical wiring in place by matching identification tags and markings on equipment.

General Installation Instructions - Continued

5. **Hoses, Air Lines and Wiring.** After installing hoses, air lines, and wiring, ensure they do not contact moving parts or components edges. Properly secure with cable ties and cushion clamps.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
GENERAL CLEANING AND DISINFECTING

INITIAL SETUP:

Materials/Parts
- Calcium Hypochlorite (WP 0190, Table 1, Item 3)
- Cleaning Compound, Solvent, Type III (WP 0190, Table 1, Item 4)
- Cleaning Kit, Supplies and Equipment, (WP 0190, Table 1, Item 5)
- Corrosion Preventive Compound (WP 0190, Table 1, Item 6)
- Rag, Wiping (WP 0190, Table 1, Item 11)
- Sodium Hypochlorite (WP 0190, Table 1, Item 13)
- Vinegar (WP 0190, Table 1, Item 23)

Personnel Required
- Two

References
- WP 0005

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Trailer Ladder Deployed (WP 0006)
- Catwalk Handrail Deployed (WP 0007)

CLEANING AND DISINFECTING

GENERAL

This work package contains information and instructions to clean and disinfect the Camel II.

WARNING

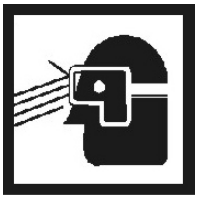
- If personnel become dizzy while using cleaning compound solvent, Type III, immediately get fresh air and medical help. If cleaning compound solvent, Type III, contacts skin or clothes, flush with cold water. If cleaning compound solvent, Type III, contacts eyes, immediately flush eyes with water and get medical attention.
- Wear appropriate eye protection when using high pressure water to clean trailer.
- Failure to comply may result in serious injury or death to personnel.

CAUTION

- Do not wipe dirt off unit when it is dry. Dirt, stones, or debris may scratch and damage unit.
- Do not direct high-pressure water stream at glass or plastic surfaces, seals, or any other component of unit that could be easily damaged by high-pressure water stream.
- Do not use strong detergent or abrasives.
- Do not allow cleaning compounds to come into contact with rubber, vinyl, or canvas materials.
- Do not allow corrosion-removing cleaning compounds to contact painted surfaces.
- Failure to comply may result in damage to equipment.

GENERAL CLEANING, EXTERIOR

WARNING



Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.). Failure to comply may result in injury to personnel.

1. **Removing Deposits.** Soak parts in cleaning compound solvent, Type III and wash away deposits by flushing or spraying. When necessary, brush with a soft bristle brush (not wire) moistened in cleaning compound solvent, Type III. Use compressed air to dry parts.

GENERAL CLEANING, EXTERIOR - Continued

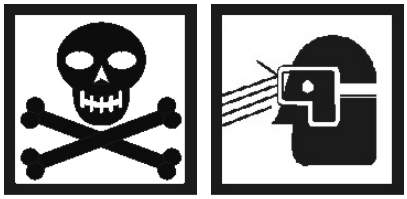
2. **Tools.** Do not use wire brushes, abrasive wheels, or compounds to clean parts unless specifically approved in the detailed procedures. Parts may be scratched or altered and may weaken a highly stressed part.

Table 1. Cleaning Materials.

Surface	Oil/Grease	Salt/Mud/Dust/Debris	Surface Rust/Corrosion
Exterior Dispensing System	Grease-cleaning compound, running water, and damp or dry rags.	High pressure water, soapy warm water, soft brush, and damp or dry rags.	Corrosion-removing compound, bristle brush, dry rags, and lubricating oil.*
Exterior Tank Assembly	Grease-cleaning compound, running water, and damp or dry rags.	High pressure water, soapy warm water, soft brush, and damp or dry rags.	Corrosion-removing compound, bristle brush, dry rags, and lubricating oil.*
Frame	Grease-cleaning compound rinsed with running water and rags.	High pressure water, soapy warm water, wire brush, and damp or dry rags.	Corrosion-removing compound, bristle brush, dry rags, and lubricating oil.*
Glass	Glass cleaning solution and clean, dry, rags.	Glass cleaning solution and clean, dry, rags.	Not applicable.
Electrical plugs, connectors, controls	Rag moistened with cleaning compound solvent, Type III.	Rag moistened with cleaning compound solvent, Type III.	Not applicable.
*After cleaning, apply light grade of lubricating oil to all unprotected surfaces to prevent continued rust.			

CLEANING AND DISINFECTING TANK INTERIOR

WARNING



- The Camel II must be inspected, cleaned, and sanitized on a regular basis. Failure to conduct a routine cleaning and disinfecting of equipment will increase the potential for the spread of infectious diseases. Servicing personnel must wear protective over garments before beginning cleaning procedures. Unprotected personnel may experience serious side effects if residual biological substances are present.
- A confined space entry permit is required before entering the water tank. No one is to enter the tank without a permit, the required training and necessary personal protective equipment.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

- Proper protective foot wear required to enter tank. Avoid contact between metal tools and tank interior.
- Do not use a mechanical grinder or sanding device to remove rust. These devices will degrade the interior surface of the tank and cause more rust.
- Failure to comply may result in damage to equipment.

NOTE

- Mineral deposits on the bottom of the tank can be removed by adding enough vinegar to cover the mineral deposits, letting it sit for 5 hr, then emptying and flushing the tank with clean water.
- Clean tank interior quarterly, before, and after use.

CLEANING TANK INTERIOR

1. Open manhole cover.
2. Set up six point dispensing system (WP 0005).
3. Prepare a soap solution by adding 1/10 cup of liquid detergent to 2 gal. of hot water (as available).
4. Thoroughly wash the inside surfaces of the water tank with the soap solution and a clean nonmetallic, nylon scrub brush. Clean interior side of single port drain with nylon tube brush.
5. Open and flush dispensing system, hoses, and spigots with soap solution. With tongue of trailer elevated drain the water tank.
6. Rinse the water tank and dispensing system twice with potable water (preferably warm water) to completely remove the soap solution.

CLEANING TANK INTERIOR - Continued

NOTE

If preparing for storage proceed to Step 8.

7. Disinfect the water tank prior to filling it with potable water.
8. Prior to storage, air dry tank interior and apply clean end caps to the retail lines.
9. Close manhole cover.

DISINFECTING TANK INTERIOR

WARNING

- Inhalation of calcium hypochlorite causes irritation to eyes, nose, mouth, throat, and lungs. It may also cause burns to respiratory tract which can result in shortness of breath, wheezing, choking, chest pain, and lung failure. Ensure work space is well ventilated.
- Always chock the wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel.

CAUTION

Do not add calcium hypochlorite granules directly to the water in metal containers. The chemical may not dissolve before contacting the metal, and it becomes very corrosive. Always dissolve the required amount of chemical in a bucket or other smaller container of water, then add the resulting solution to the water in the water tank to be disinfected. Failure to comply may result in damage to equipment.

NOTE

The field sanitation team (FST) must supervise the disinfecting process.

1. Open manhole cover.
2. Fill the water tank full of potable water (WP 0005).
3. Mix the required amount of chemical in water in a separate container with a 100-mg/L chlorine concentration. A 100-mg/L chlorine concentration can be achieved by adding 6 qt (1.5 gal.) of 5% liquid (typical household) unscented bleach to 800 gal. of water or 6.33 oz of 70% available Calcium Hypochlorite (HTH) to 800 gal. of water.
4. For HTH, stir the mixture vigorously until the granules dissolve. Some granules may not dissolve completely. Allow the solution to sit for 1 min to allow the particles that did not dissolve to settle to the bottom.
5. Slowly pour the solution into the tank. Do not pour the granules that did not dissolve into the Camel II tank.
6. Mix or slosh the solution around so it contacts all surfaces.
7. Run some of the solution through the retail lines (valves, hoses, spigots, and reducers).
8. Keep all interior surfaces wet with the solution for at least 60 min.

9. Properly discard HTH granules that did not dissolve. Local requirements may require de-chlorination prior to discharging.
10. Drain the disinfecting solution into a sanitary sewer or other approved location (not into a lake, stream, or storm drain). Local requirements may require de-chlorination prior to discharging.
11. Rinse the water tank, and retail lines (valves, hoses, and spigots) twice with potable water. With tongue of trailer elevated, drain the water tank and return trailer to original position.
12. Without entering the tank, use squeegee to funnel remaining water toward the single port drain. When water tank is dry, close manhole cover and spill box lid.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Catwalk Handrail (WP 0007)
2. Stow Trailer Ladder (WP 0006)

END OF TASK

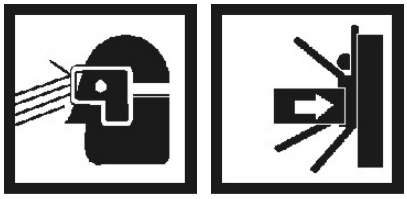
END OF WORK PACKAGE

OPERATOR MAINTENANCE
GROUND FAULT CIRCUIT INTERRUPTER (GFCI) BREAKER TEST AND RESET

INITIAL SETUP:

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Trailer wheels must be chocked before coupling, uncoupling or when trailer is parked. Trailer wheels may roll if they are not chocked.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

GFCI circuit breaker test button will only function when external power is present at the breaker.

TEST

1. With the power cord (Figure 1, Item 1), connect Camel II external power plug (Figure 1, Item 2) to an external 240 VAC single phase power source.
2. At control panel (Figure 1, Item 3) turn main power switch (Figure 1, Item 4) to ON position. Power on will be indicated by a illuminated green light (Figure 1, Item 5).
3. Ensure GFCI breaker bar (Figure 1, Item 6) is in the UP position. Refer to reset procedure if GFCI breaker bar will not lock in the UP position.
4. Press the GFCI circuit breaker TEST button (Figure 1, Item 7) on the GFCI circuit breaker which will trip the GFCI breaker bar.

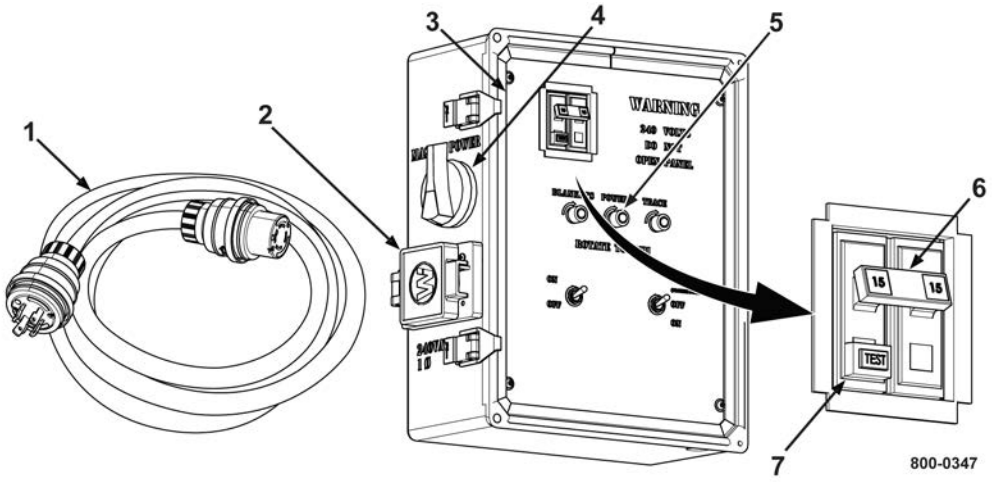


Figure 1. GFCI Circuit Breaker Test.

END OF TASK

RESET

Pull GFCI breaker bar (Figure 2, Item 1) all the way DOWN, then return to the UP position to reset.

RESET - Continued

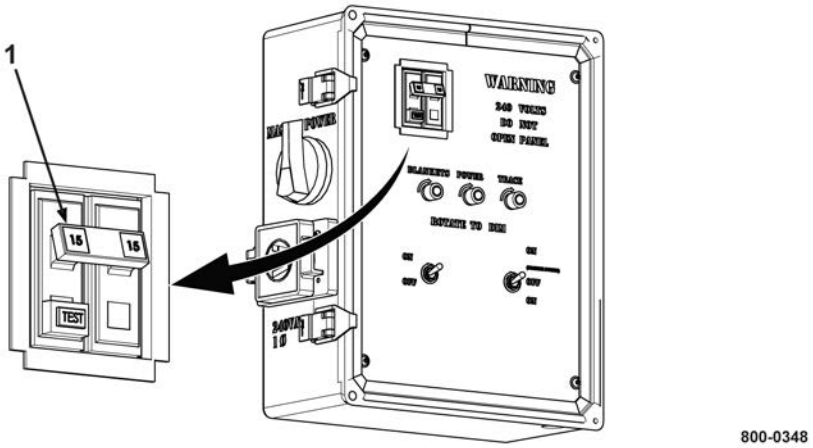


Figure 2. GFCI Circuit Breaker Reset.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
PREPARATION FOR STORAGE OR SHIPMENT

INITIAL SETUP:

Tools and Special Tools
Adjustable, Wrench, 10 in. (WP 0188, Table 2, Item 1)
Hammer, Dead Blow (WP 0188, Table 2, Item 20)

Personnel Required
Two

References
AR 750-1
MTMCTEA Pam 55-19
SDDCTEA Pam 55-22

References (cont.)
TB 9-2300-422-20
TB 55-46-1
TM 9-2330-394-13&P
WP 0005
WP 0006
WP 0007
WP 0010
WP 0013
WP 0049
WP 0050
WP 0052

PREPARATION FOR STORAGE INTRODUCTION

NOTE

Preparation for storage and shipment instructions for the The M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. The operator must be familiar with preparation for storage and shipment instructions for the trailer prior to performing any operation.

This section gives instructions for making the Camel II ready for shipment or storage. Refer to AR 750-1 for detailed administrative storage instructions. Refer to TB 9-2300-422-20 for security procedures.

PREPARATION FOR STORAGE OR SHIPMENT

Storage Maintenance Procedures

1. Provide access to the Camel II during storage.
2. Perform complete lubrication in accordance with (IAW) PMCS Introduction (WP 0049) and PMCS, Including Lubrication Instructions (LI) (WP 0050).
3. Ensure tank is dry prior to storage.
4. If possible, store trailers close together, out of direct sunlight and away from electrical or generating equipment.
5. Ensure BII is stowed IAW (WP 0013). Ensure stowage box lids are locked and secured.

Monthly Storage Maintenance Instructions

Conduct visual inspection of Camel II. Correct any discrepancies. Inspect oil can points. Lubricate if necessary. Check grease coating on all chromium plated and unpainted surfaces. If grease was wiped from chromium plates or unpainted surfaces when trailer was moved, re-coat these surfaces.

PREPARATION FOR STORAGE OR SHIPMENT - Continued

Quarterly Storage Maintenance Instructions

Refer to TM 9-2330-394-13&P for M1095 Series, 5 Ton Medium Tactical Vehicle Trailer (MTVT).

Yearly Storage Maintenance Instructions

1. Clean exterior of Camel II (WP 0052).
2. Visually inspect Camel II. Correct all discrepancies.
3. Lubricate auxiliary equipment and oil can points.

END OF TASK

PREPARATION FOR SHIPMENT

Land, Sea, and Air Shipment

Instructions for shipment of the unit, by land, sea, and air are contained in the following publications:

- MTMCTEA Pam 55-19, Tiedown Handbook for Rail Movements.
- SDDCTEA Pam 55-22, Lifting and Lashing Handbook for Marine Movements.
- TB 55-46-1, Standard Characteristics (Dimensions, Weight and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment (in T0E Line Item Number Sequence).

END OF TASK

SHIPPING/STORAGE CONFIGURATION

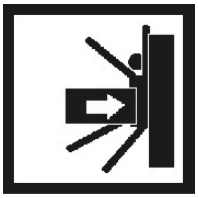
Prepare for Shipping or Storage

1. Secure all BII (WP 0013).
2. Ensure all switches are in OFF position (WP 0010).
3. Close and secure all doors and lids with plastic ties or suitable locks.
4. Stow and secure catwalk handrail (WP 0007).
5. Stow and secure trailer ladder (WP 0006).

SHIPPING/STORAGE CONFIGURATION - Continued

Preparation for Fixed Wing Air Transport when Full

WARNING



DO NOT ship the Camel II by fixed wing air transport with a partial water load. Failure to comply may result in injury or death to personnel and/or damage to equipment.

1. Fill water tank (WP 0005).
2. Remove three relief valves (Figure 1, Item 1) inside spill box (Figure 1, Item 2), by unscrewing counter-clockwise.
3. Place three relief valves inside 25 in. stowage bag (WP 0013).

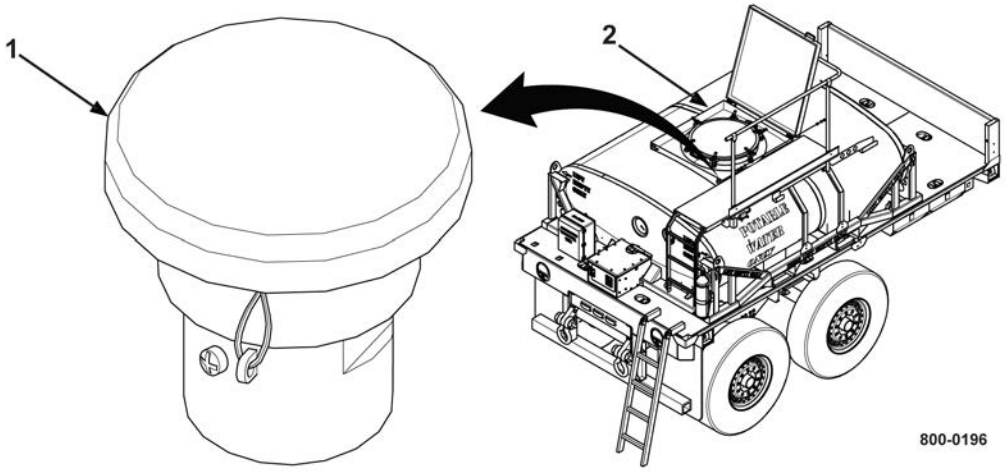


Figure 1. Relief Valves.

SHIPPING/STORAGE CONFIGURATION - Continued

NOTE

If the O-ring at base of air transport vent plug is damaged or missing, replace with spare from BII (WP 0188, Table 2, Item 22).

4. Remove three air transport vent plugs (Figure 2, Item 1) from 25 in. stowage bag (WP 0013).

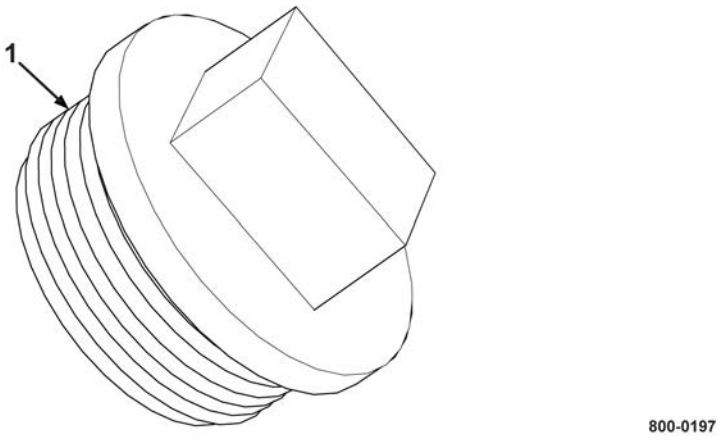


Figure 2. Air Transport Vent Plugs.

5. Install three air transport vent plugs inside the spill box where pressure relief valves were removed.
6. Close manhole cover, laying it flat and centered on manhole collar (Figure 3, Item 1). Rotate six latching bolts (Figure 3, Item 2) up onto manhole cover (Figure 3, Item 3).

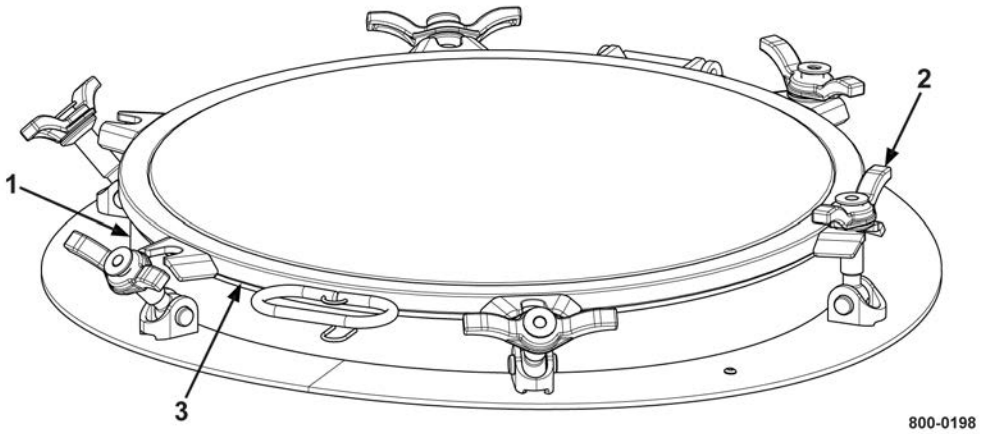


Figure 3. Manhole Cover Assembly.

SHIPPING/STORAGE CONFIGURATION - Continued

7. Hand tighten six wing nuts (Figure 4, Item 1).

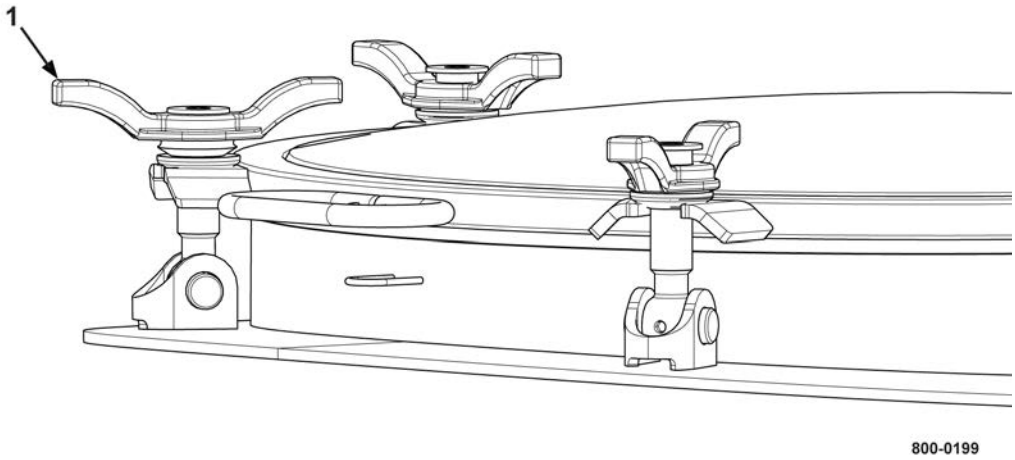


Figure 4. Hand Tighten Latching Bolts.

8. After each wing nut has been tightened, each wing nut shall be turned one half rotation using dead blow hammer in the following sequence: 1-4-2-5-3-6.

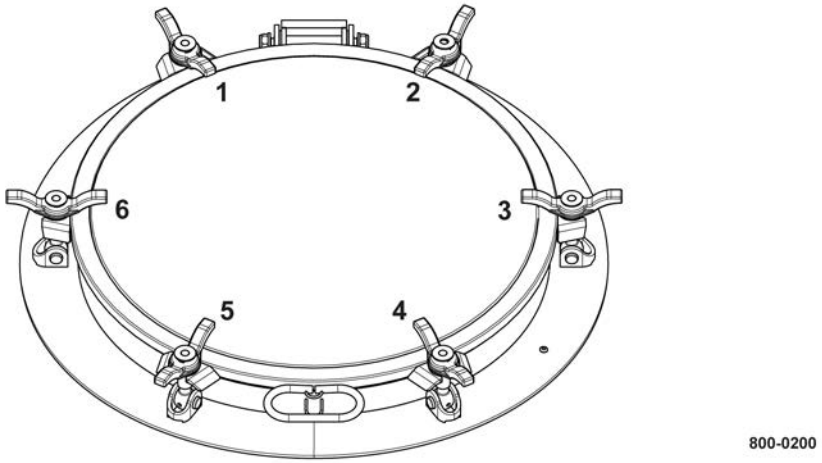
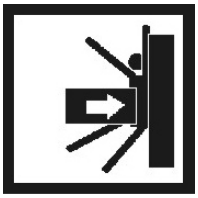


Figure 5. Latching Bolt Numbering and Tightening Sequence.

SHIPPING/STORAGE CONFIGURATION - Continued

External Air Transport Lift Provisions

WARNING



Lift Camel II with tank empty or full ONLY. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

The Camel II is equipped with four lifting arms (Figure 6). These lifting arms are utilized to externally transport the Camel II System by air. The illustration below depicts location of lifting arms. A spreader bar must be used when the Camel II System is being transported using the lifting points identified below, UNLESS 18 ft straps (or longer), rated at 25,000 lb, are being utilized to lift the Camel II.

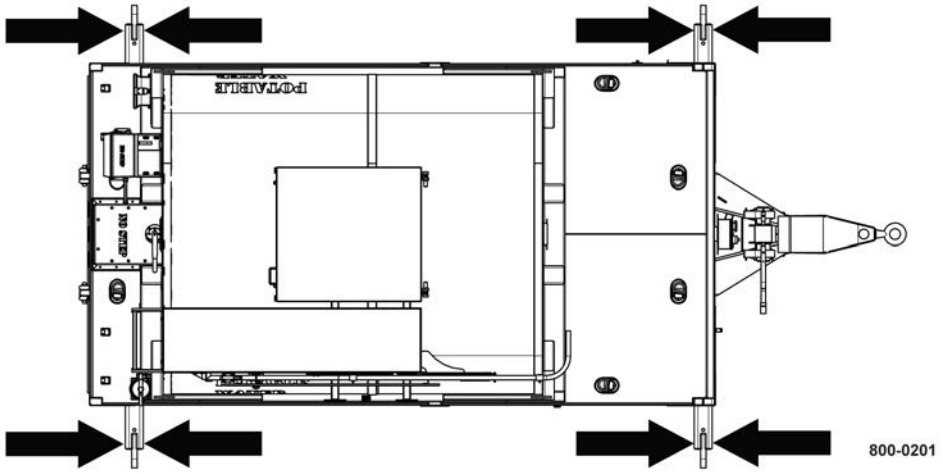


Figure 6. Camel II Tie-Down Provisions.

END OF TASK

END OF WORK PACKAGE

CHAPTER 6

FIELD MAINTENANCE INSTRUCTIONS

FIELD MAINTENANCE
SERVICE UPON RECEIPT

INITIAL SETUP:

Materials/Parts
Cleaning Compound, Solvent, Type III (WP 0190, Table 1, Item 4)

References
DA Form 2407
DA PAM 738-750
DD Form 1397
MIL-PRF-680, Type III
SF 361
TM 9-2330-394-13&P
WP 0005
WP 0006

References (cont.)
WP 0007
WP 0008
WP 0009
WP 0010
WP 0011
WP 0012
WP 0050
WP 0052
WP 0057
WP 0188
WP 0189

NOTE

Perform Service Upon Receipt for the M1095 Trailer, using TM 9-2330-394-13&P, M1095 Series, 5 Ton Medium Tactical Vehicle Trailer (MTVT). The Field Sanitation Team (FST) must supervise the Disinfecting process.

SERVICE UPON RECEIPT OF MATERIEL

This work package covers: Service Upon Receipt of Materiel and Preliminary Servicing of Equipment.

Unpacking

1. Read "Processing and De-processing Record of Shipping, Storage and Issue of Vehicles and Spare Engines" tag, (DD Form 1397) and follow all precautions checked. This tag should be attached to a visible location on the tongue assembly.
2. Remove any metal strapping, plywood, tape, seals, wrapping paper, or any other shipping and protective items from the unit.

END OF TASK

Checking Unpacked Equipment

1. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 361, Transportation Discrepancy Report.
2. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable service instructions (e.g., for Army instructions, see DA PAM 738-750).
3. Check to see whether the equipment has been modified.
4. Inventory the trailer equipment. For detailed procedures, refer to Basic Issue Items (BII) (WP 0188) and Additional Authorization List (AAL) (WP 0189).

Table 1. Special Service Instructions

LOCATION	ITEM	ACTION	REMARKS
Camel II, Frame and Tank Assembly	Tank Assembly and Sheet Metal	1. Inspect tank assembly and sheet metal for evidence of damage during shipment.	
		2. Check doors, latches, and hinges on compartments for proper operation.	PMCS
		3. Check mounting hardware and tighten as necessary.	PMCS
Camel II, Frame and Tank Assembly	Electrical System	1. Check all lights for burned out lamps, loose connections, and dirty or broken lenses. Replace as needed.	Inspection
		2. Check that all electrical equipment functions properly.	Inspection

END OF TASK

Processing Unpacked Equipment

WARNING

- Cleaning compound solvent, Type III, MIL-PRF-680, Type III is toxic and flammable. Wear protective goggles and gloves. Use only in well-ventilated area. Avoid contact with skin, eyes, clothes, and do not breathe vapors. Keep away from open flame. Never smoke when using cleaning compound solvent, Type III.
- If personnel become dizzy while using cleaning compound solvent, Type III, immediately get fresh air and medical help. If cleaning compound solvent, Type III, contacts skin or clothes, flush with cold water. If cleaning compound solvent, Type III, contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Failure to comply may result in serious injury or death to personnel.

1. Clean all surfaces coated with rust-preventive compound with cleaning compound solvent, Type III.
2. Clean Camel II body, frame, and tank assembly (WP 0052), Cleaning Trailer.

END OF TASK

PRELIMINARY SERVICING OF EQUIPMENT

1. Perform the Semiannual PMCS (WP 0057).
2. Lubricate all points shown in (WP 0050). PMCS - Monthly, regardless of interval.
3. Schedule a Semiannual service in accordance with (IAW) DA PAM 738-750.
4. If deficiencies appear to involve unsatisfactory design, report deficiencies on DA Form 2407.

END OF TASK

General

Refer to (WP 0005) through (WP 0012) for Operator Instructions for the Camel II.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - INTRODUCTION

GENERAL

To ensure the Camel II is ready for operation at all times, it must be inspected on a regular basis so defects may be found and corrected before they result in injury, damage, or equipment failure.

Field PMCS (WP 0057) contains systematic instructions on inspections, services, tests, and corrections to be performed by Field Level Maintenance to keep your equipment in good operating condition and ready for its primary mission.

For information on Corrosion Prevention and Control (CPC), refer to (WP 0001).

The Field Level PMCS is performed semiannually. The Field Level PMCS contains checks and services necessary to ensure that the Camel II is ready for operation.

EXPLANATION OF TABLE ENTRIES

Item Number (Item No.) Column. Numbers in this column are for reference. When completing DA Form 2404 or DA Form 5988-E (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must perform checks and services for the interval listed.

NOTE

If both an hours and calendar interval are provided, perform check or service at whichever interval comes first.

Interval Column. This column tells you when you must perform the procedure in the procedure column.

- Semiannually procedures must be performed semiannually.

Man-Hours Column. This column indicates man-hours required to complete prescribed procedure.

Item to be Checked or Serviced Column. This column provides the location and item to be checked or serviced.

NOTE

The WARNINGs and CAUTIONs appearing in your PMCS table should always be observed. WARNINGs and CAUTIONs appear before applicable procedures. You must observe these WARNINGs to prevent serious injury to yourself and others, and CAUTIONs to prevent your equipment from being damaged.

Procedure Column. This column gives the procedure you must perform to check or service the item listed in the Item to Check/Service column, to know if the equipment is ready or available for its intended mission. You must perform the procedure at the time stated in the Interval column.

Equipment Not Ready/Available If: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you perform check/service procedures that show faults listed in this column, the equipment is not mission-capable. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

GENERAL INSPECTION AND SERVICE PROCEDURES

Always perform PMCS in the same order so it gets to be a habit. Once you have had some practice, you will spot anything wrong in a hurry. If any deficiency is discovered, perform the appropriate troubleshooting task in Chapter 4 of this manual.

GENERAL INSPECTION AND SERVICE PROCEDURES - Continued

Before performing preventive maintenance, read all the checks required for the applicable interval and prepare everything needed to make all the checks. Have several clean rags handy. Perform ALL inspections at the applicable interval.

Cleanliness

Dirt, grease, oil, and debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use general purpose liquid detergent and water when you clean rubber, plastic, and painted surfaces. Always perform PMCS on a clean system.

Bolts, Nuts and Screws

Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition. You cannot try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one is loose, tighten it.

Welds

Look for loose or chipped paint, rust, or gaps where parts are welded together.

Electric Wires and Connectors

Look for cracked or broken insulation, bare wires, and loose or broken connectors. Reconnect loose connectors. Ensure wires are in good condition.

Rust and Corrosion

Check metal parts for rust and corrosion. If any bare metal or corrosion exists, clean and apply a light coat of OE/HDO lubricating oil.

Fluid Lines and Fittings

Look for wear, damage, or leaks and make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, correct it if authorized by the Maintenance Allocation Chart (WP 0187).

Fluid Leakage

It is necessary for you to know how fluid leakage affects the status of your machine. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your machine. Learn and be familiar with them and remember: when in doubt, notify your supervisor.

Fluid Leakage - Continued

CAUTION

Operation is allowable with Class I and Class II leakage, EXCEPT for fuel, where NO leaks are allowed. WHEN IN DOUBT, NOTIFY YOUR SUPERVISOR. When operating with Class I or Class II leaks, check fluid levels more frequently. Class III leaks must be reported immediately to field maintenance. Failure to do this will result in damage to machine and/or components.

LEAKAGE DEFINITIONS FOR PMCS:

Class I. Seepage of fluid indicated by wetness or discoloration not great enough to form drops.
Class II. Leakage of fluid great enough to form drops, but not enough to cause drops to fall from component being checked or inspected.
Class III. Leakage of fluid great enough to form drops that fall from the item being checked or inspected.

END OF WORK PACKAGE

FIELD MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Bar, Extension, ¾ in. DR, 6.5 in.- 7.5 in. Length (WP 0191, Table 1, Item 1)
- Handle, Sliding-T, ¾ in. Drive (WP 0191, Table 1, Item 8)
- Wrench, Torque, Click, Ratcheting, ¾ in. Drive, 600 lb-ft (WP 0191, Table 1, Item 20)
- Socket, Socket Wrench, 3-½ in. Long, 1-½ in.x¾ in. Drive (WP 0189, Table 1)

Materials/Parts
- Rag, Wiping (WP 0190, Table 1, Item 11)

References
- TB 43–0242
- TM 9-2330-394-13&P
- WP 0053
- WP 0075

Table 1. PMCS Procedures

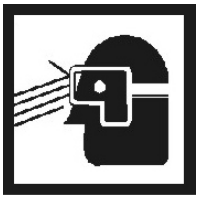
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				WARNING  • Wear eye protection when working on the Camel II. • Trailer must be secure. Always chock wheels before working on the Camel II. • Failure to comply may result in serious injury or death to personnel and/or damage to equipment. **NOTE** Perform all Semiannual Preventative Maintenance Checks and Services (PMCS) on the M1095 Series, 5 Ton Medium Tactical Vehicle Trailer (MTVT) using TM 9-2330-394-13&P	
1	Semiannual		Access Doors	1. Check access doors (Figure 1, Item 1), discharge housing access door (Figure 1, Item 2) and electrical control box access door (Figure 1, Item 3) for damaged, loose, or missing parts.	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

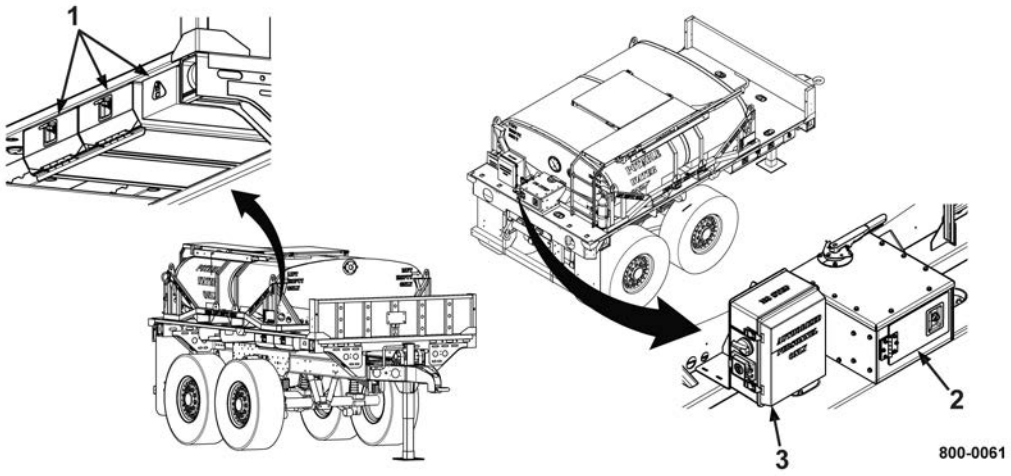


Figure 1. Access Doors.

2	Semiannual		Heat Trace Power Leads	1. Inspect heat trace power leads (Figure 2, Item 1) as they travel underneath the trailer. Ensure connector plugs (Figure 2, Item 2) are connected and seated properly. Inspect in-line fuse (Figure 2, Item 3).	Damaged or broken wires that prevent operation below 32°.

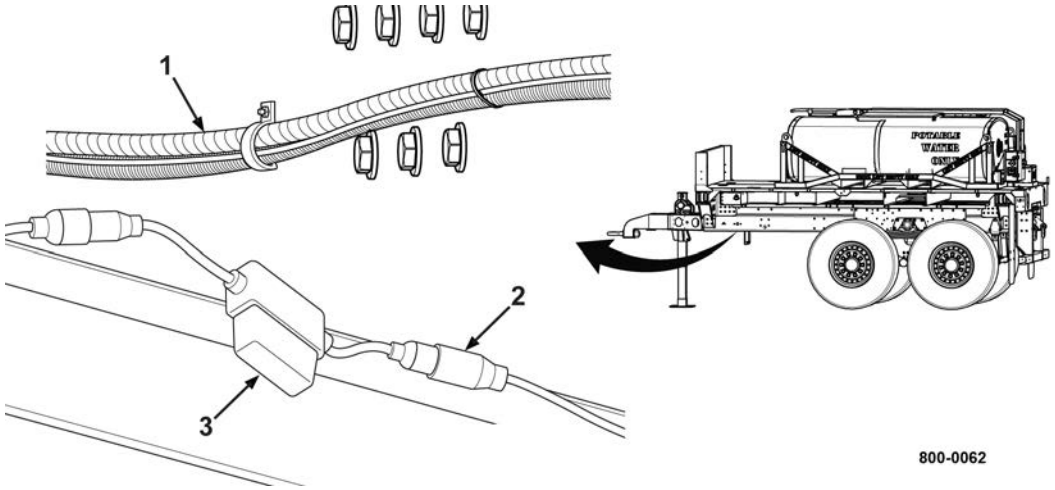


Figure 2. Heat Trace Power Leads.

3	Semiannual		Interior Tank Inspection	1. Inspect interior of tank, refer to tank interior inspection (WP 0075).	Tank contains contaminants.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Semiannual		Water Tank Frame Welds	1. Check water tank frame (Figure 3, Item 1) for cracked or broken welds.	

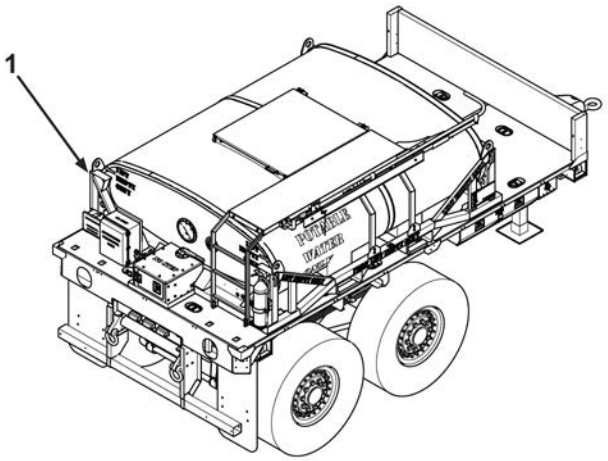


Figure 3. Water Tank Frame Welds.

5	Semiannual		Catwalk Ladder and Catwalk Welds	**NOTE** Operation with damaged catwalk/ handrail may violate AR-385-10. 1. Check catwalk ladder (Figure 4, Item 1) and catwalk assembly (Figure 4, Item 2) for cracked or broken welds.	

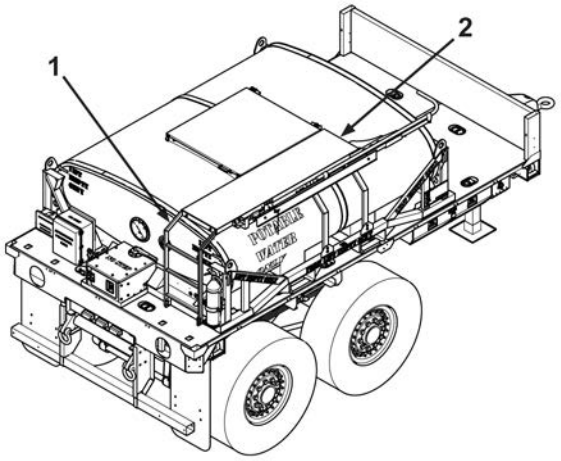


Figure 4. Catwalk Ladder and Catwalk Welds.

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
6	Semiannual		Chemical Agent Resistant Coating (CARC) Paint	1. Check exterior water tank assembly (Figure 5, Item 1) for damaged or missing CARC paint. Refer to TB 43-0242 for CARC spot painting.	

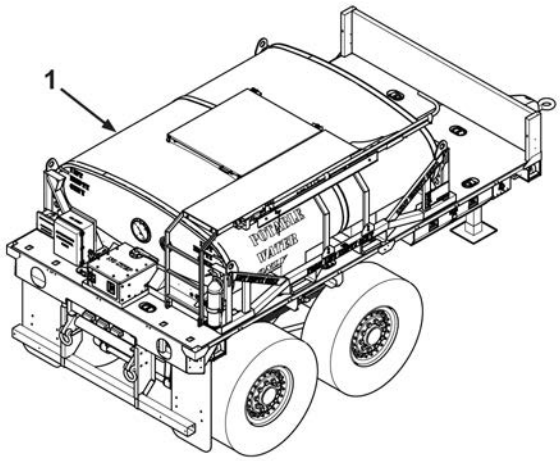


Figure 5. Chemical Agent Resistant Coating (CARC) Paint.

7	Semiannual		Ground Fault Circuit Interrupter (GFCI) Circuit Breaker	1. Connect electrical control box (Figure 6, Item 1) to an external power source with power cord (Figure 6, Item 2). 2. Ensure GFCI breaker bar (Figure 6, Item 3) is in UP position. 3. Turn main power switch (Figure 6, Item 4) to ON position. When power is supplied to electrical control box, power indicator light (Figure 6, Item 5) will illuminate green. **NOTE** Operation with damaged GFCI circuit breaker may violate AR-385-10. 4. Test and reset GFCI circuit breaker (WP 0053).	GFCI circuit breaker does not trip or reset when operating below 32°F.

Table 1. PMCS Procedures - Continued

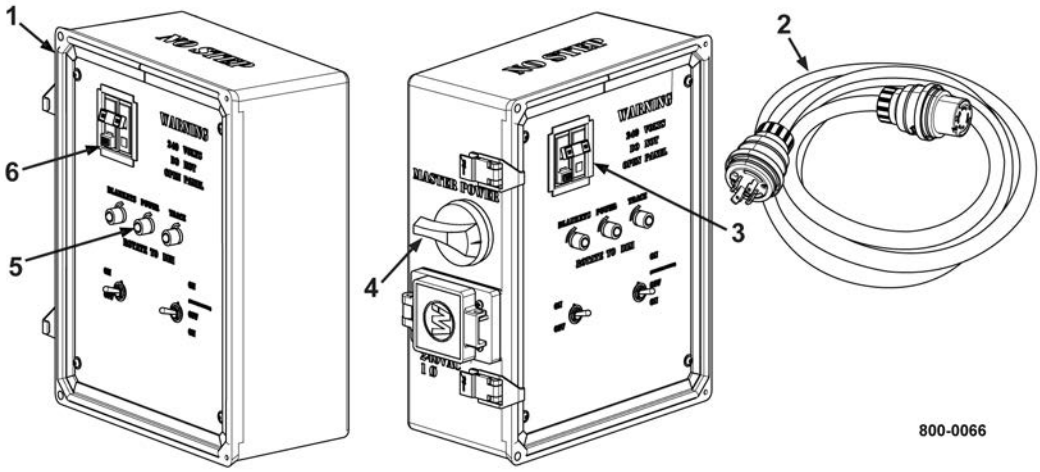
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 Figure 6. GFCI Circuit Breaker.	
				5. Turn main power switch to OFF position, disconnect power cord.	
8	Semiannual		Electrical Control Box	**WARNING** Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before removing electrical box front panel. Failure to comply may result in serious injury or death to personnel. 1. Open electrical control box lid (Figure 7, Item 1). Remove four screws (Figure 7, Item 2) and flat washers (Figure 7, Item 3). Remove electrical control box front panel (Figure 7, Item 4) from electrical control box (Figure 7, Item 6) and set aside, leaving all wiring connections intact.	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				2. Inspect all electrical connections for secure attachment to electrical components. 3. Inspect all wires for breaks, damage, or chaffing. 4. Visually inspect front panel seal (Figure 7, Item 5) for damage. 5. Install electrical control box front panel (Figure 7, Item 4) four flat washers (Figure 7, Item 3), and screws (Figure 7, Item 2) on electrical control box (Figure 7, Item 6).	

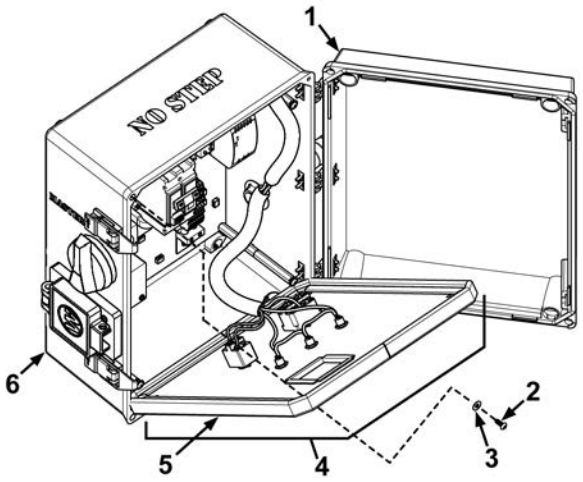


Figure 7. Electrical Control Box.

9	Semiannual		Mounting Pin	1. Remove bottom nut (Figure 8, Item 1) of four water tank mounting pins (Figure 8, Item 2). 2. Check torque of each top nut (Figure 8, Item 3), ensure each nut is torqued to 525 lb-ft (712 N•m). 3. Install and tighten four bottom nuts (Figure 8, Item 1) firmly against top nut (Figure 8, Item 3) then torque bottom nut to 300 lb-ft (407 N•m).	

Table 1. PMCS Procedures - Continued

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:

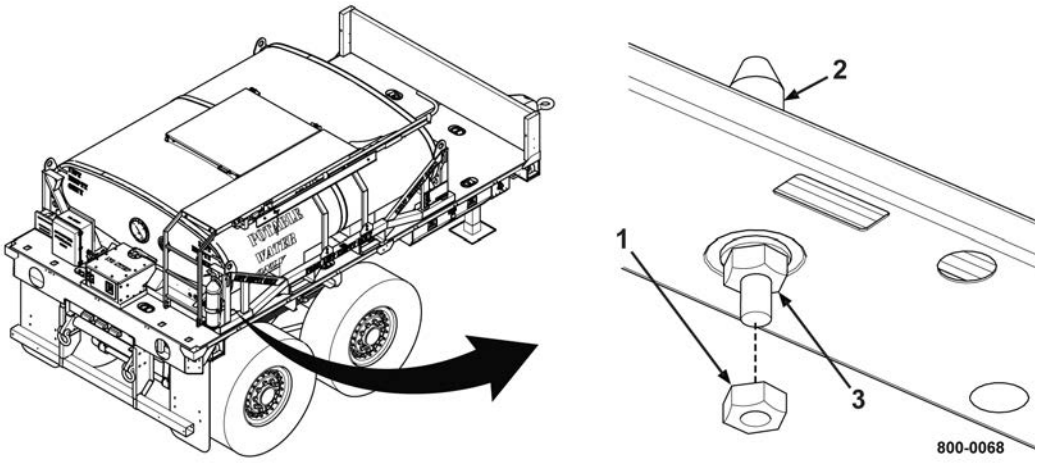


Figure 8. Mounting Pin.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE INTRODUCTION

INITIAL SETUP:

Materials/Parts
Corrosion Preventive Compound (WP 0190, Table 1, Item 6)

References
TB-43-0242
TM 9-2330-394-13&P

INTRODUCTION

This section contains maintenance tasks/procedures that can be performed using the General Mechanic's Tool Kit (GMTK), common shop tools, and/or assistance from a qualified automotive mechanic. Before beginning a task, determine the amount of repair, modification, or replacement necessary to fix the equipment. Disassemble equipment only as far as necessary to repair or replace damaged or broken parts.

GENERAL MAINTENANCE INSTRUCTIONS

NOTE

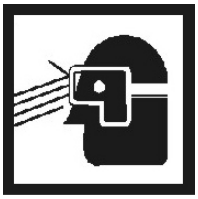
All general maintenance instructions for the M1095 Series, Modified 5 Ton Medium Tactical Vehicle Trailer (MTVT), are located within TM 9-2330-394-13&P. Maintainer must be familiar with general maintenance instructions for the trailer prior to performing any operation.

General Removal Instructions

1. **Work Required.** Remove parts if repair or replacement is required. Do not disassemble a component any further than necessary.
2. **Preparation.** Before removal of any electrical components, ensure system component is not energized. Disconnect Camel II from external or inter-vehicular power source. Before removal of fasteners (nuts, self-locking nuts) remove any paint on threads to prevent binding of fastener.
3. **Identification.** To ease assembly and installation, mark connectors, wires, and mating ends of lines before disconnecting them. Identify similar parts to ensure correct assembly.
4. **Position of Valves.** Before removing valve handles, mark or diagram their positions when open and closed. This will help during assembly.
5. **Location.** Before removing cable ties, cushion clamps, hoses, tubing, wiring, etc., note the location, position and routing to ensure correct assembly.

General Removal Instructions - Continued

WARNING



Wear appropriate eye protection when drilling out rivets. Failure to comply may result in injury to personnel.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may cause damage to equipment.

6. **Rivet Removal.** Grind off the head of the rivet. Indent the center of the grounded area. Drill through the rivet head with a drill bit. Then lightly tap the head of the rivet with a drift punch. Be sure not to enlarge the hole, otherwise you will need to replace the rivet with a larger rivet. Drill out the remaining rivet, if necessary.

General Disassembly Instructions

1. **Cleanliness.** Work area must be as clean as possible to prevent contamination to components.

CAUTION

Self-locking fasteners that are loosened must be replaced, not tightened. Failure to comply may cause damage to equipment.

2. **Locking Parts.** Replace all lock washers, cotter pins, and self-locking nuts at time of reassembly.
3. **Expendable Parts.** All gaskets, preformed packing and seals removed during repair must be discarded and replaced with new parts.
4. **Removing Seals.** Be sure all traces of oil, gaskets, and sealants are removed from components. When possible, use wood or plastic probes and scrapers to prevent damage to machined surfaces.
5. **Parts Protection.** To keep dust, dirt, moisture, and other objects out of internal parts of systems or components, cap or tape all open tubes, hoses, air lines, fittings, and component openings as soon as part is removed. Wrap all removed parts in clean paper or dip parts in preservation oil.

General Inspection Instructions

1. **Cleaning.** Clean all parts before inspection. Check for defects such as physical distortion, wear, cracks, and pitting.
2. **Sealing Surfaces.** Inspect all surfaces in contact with gaskets, preformed packing, or seals for nicks and burrs. If any defect is found, remove before assembly.
3. **Tubing and Hoses.** Inspect all hose surfaces for broken or frayed fabric. Check for breaks caused by sharp kinks or contact with other parts. Inspect fitting threads and mating surfaces for damage. Replace any defective part. After assembly and during initial operation period, check for leaks.
4. **Electrical Parts.** Inspect all wiring harnesses for broken, chafed, or burned wiring. Inspect all terminal connectors for loose connections and broken parts.

General Inspection Instructions - Continued

5. **Metal Parts.** Visually inspect all castings and weldment for cracks. Parts that carry a great load should receive magnetic particle inspection. Critical nonferrous parts may be inspected with fluorescent penetrant.

General Repair Instructions

1. **Burrs.** Remove burrs from surface area or threads with a fine-cut file or crocus cloth.
2. **Exterior Parts.** Chassis and exterior painted parts may be resurfaced when paint is damaged or where parts have been repaired. Refer to TB 43-0242 Chemical Agent Resistant Coating (CARC) Spot Painting.

NOTE

Polished and machined steel parts not protected by cadmium, tin, copper, or other plating or surface treatment require protection. Bare metal parts must be free of moisture when protective coating is applied.

3. **Protecting Parts.** Protect bare steel surfaces from rust when not actually undergoing repair work. Dip parts in, or spray them with, corrosion preventive compound . Aluminum parts may require protection in atmospheres having a high salt content.
4. **Screws, Nuts and Fittings.** Replace any screw, nut, or fitting with damaged threads. Inspect tapped holes for thread damage. If cross-threading is evident re-tap the hole for the next oversize screw or stud. If re-tapping will weaken the part or if the cost of the part makes re-tapping impractical, replace the part. Chasing the threads with proper size tap or die may be adequate.
5. **Dents.** Straighten minor body dents by tapping with a soft-faced hammer, using a wooden block backing.
6. **Sheet Metal Repair.** Repair minor skin cracks by installing patches.
7. **Wire Repair.** Replace all broken, worn, or burned electrical wiring. Wires with several broken strands must be replaced. Broken strands will increase the resistance of the wire and impair efficiency of electrical components. Wire numbers must be permanently identified on any new wiring.

General Assembly Instructions

1. **Preparation.** Remove protective grease coatings from new parts before installation.
2. **Pipe Joints and Fittings.** Use non-hardening sealing compound to join piping and fittings.
3. **Gaskets.** Remove all traces of previous gasket and sealant before installing new gasket. Coat both sides of gasket with sealant to provide added sealing.

General Installation Instructions

1. **Preparation.** When unpacking items, remove all packing material, barrier paper, tape, plastic bags, protective caps, and protective grease coatings. Handle and store removed components carefully.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound to hose connections. Failure to comply may result in damage to equipment.

2. **Sealing Compounds.** Use sealing compounds as required in each maintenance task.
3. **Torquing.** Tighten nuts, bolts, screws, and fittings as required in each maintenance task.
4. **Identification Tags.** Put hoses, tubes, lines, and electrical wiring in place by matching identification tags and markings on equipment.

General Installation Instructions - Continued

5. **Hoses, Air Lines and Wiring.** After installing hoses, air lines, and wiring, ensure they do not contact moving parts or components edges. Properly secure with cable ties and cushion clamps.

END OF WORK PACKAGE

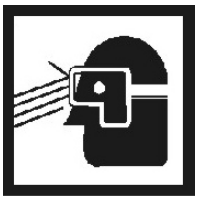
FIELD MAINTENANCE
GENERATOR SET ADAPTOR REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0156, Figure 2

WARNING



Wear eye protection when working on the Camel II components. Failure to comply may result in injury to personnel.

NOTE

Ensure all wires are properly marked prior to disconnecting.

This work package covers:

Disassembly and Assembly of Generator Set Adaptor.

DISASSEMBLY

1. Loosen two screws (Figure 1, Item 1) on face of plug (Figure 1, Item 2).
2. From base of enclosure (Figure 1, Item 3), unscrew nut (Figure 1, Item 4).
3. Slide bushing (Figure 1, Item 5) and water tight plug (Figure 1, Item 6) from bottom of enclosure (Figure 1, Item 3).
4. Slide cord (Figure 1, Item 7) and plug (Figure 1, Item 2) through top of enclosure (Figure 1, Item 3).
5. Loosen four screws (Figure 1, Item 9) that hold wires (Figure 1, Item 8) connected to backside of plug (Figure 1, Item 2).
6. Remove cord (Figure 1, Item 7) from bottom of enclosure (Figure 1, Item 3).

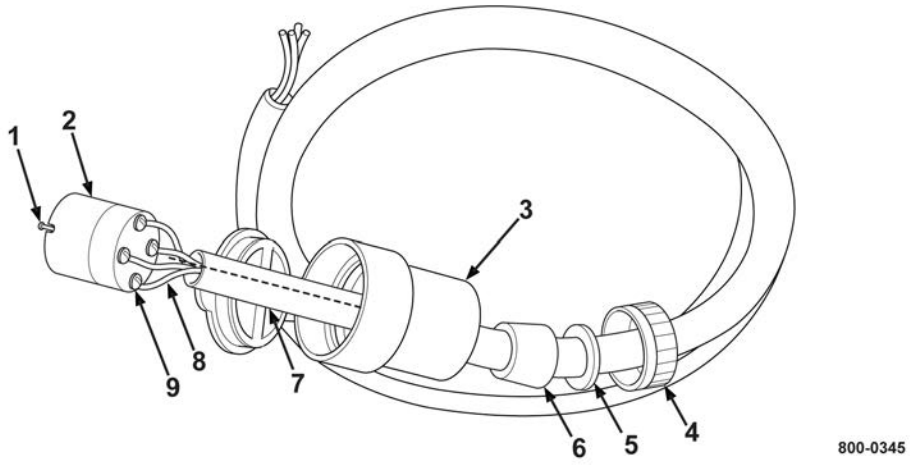


Figure 1. Generator Set Adaptor Disassembly.

END OF TASK

ASSEMBLY

1. Slide cord (Figure 1, Item 7) through bottom of enclosure (Figure 1, Item 3).
2. Tighten four screws (Figure 1, Item 9) that connect four wires (Figure 1, Item 8) to backside of plug (Figure 1, Item 2). See wire connections (Figure 2).
3. Slide cord (Figure 1, Item 7) and plug (Figure 1, Item 2) into enclosure so the screws (Figure 1, Item 1) enter face with threaded openings.
4. Tighten both screws (Figure 1, Item 1).
5. Slide nut (Figure 1, Item 4), bushing (Figure 1, Item 5), and water tight plug (Figure 1, Item 6) onto cord (Figure 1, Item 7) and tighten nut (Figure 1, Item 4).

ASSEMBLY - Continued

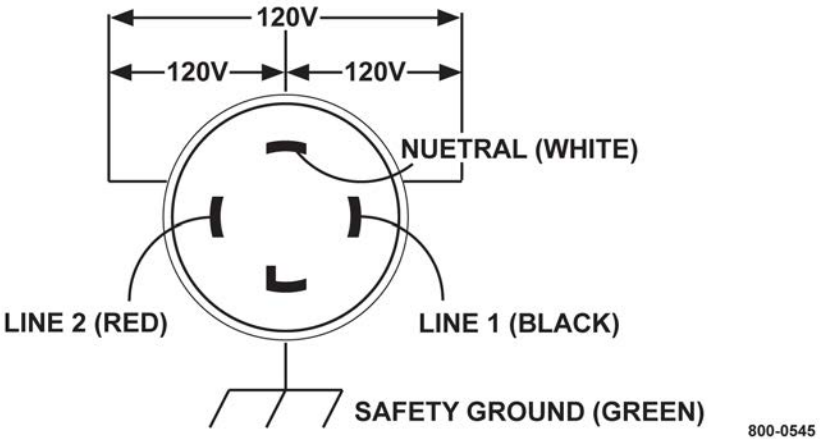


Figure 2. Wire Connections.

END OF TASK

END OF WORK PACKAGE

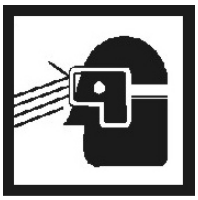
FIELD MAINTENANCE
EXTENSION, 25 FT POWER CORD REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0157, Figure 3

WARNING



- Wear eye protection when working on the Camel II components. Failure to comply may result in injury to personnel.

NOTE

- The 25 ft power cord contains a female end and a male end. Each is disassembled and assembled the same way. The female end is shown in this work package.
- Ensure all wires are properly marked prior to disconnecting.

This work package covers:

Disassembly and Assembly of Extension, 25 ft Power Cord.

DISASSEMBLY

1. Loosen two screws (Figure 1, Item 1) on face of plug (Figure 1, Item 2).
2. From base of enclosure (Figure 1, Item 3), unscrew nut (Figure 1, Item 4).
3. Slide bushing (Figure 1, Item 5) and water tight plug (Figure 1, Item 6) from bottom of enclosure (Figure 1, Item 3).
4. Slide power cord (Figure 1, Item 7) and plug (Figure 1, Item 6) through top of enclosure (Figure 1, Item 3).
5. Loosen four screws (Figure 1, Item 9) that hold wires (Figure 1, Item 8) connected to backside of plug (Figure 1, Item 2).
6. Remove power cord (Figure 1, Item 2) from bottom of enclosure (Figure 1, Item 3).
7. Remove bushing (Figure 1, Item 5), water tight plug (Figure 1, Item 6), and nut (Figure 1, Item 4) from power cord.

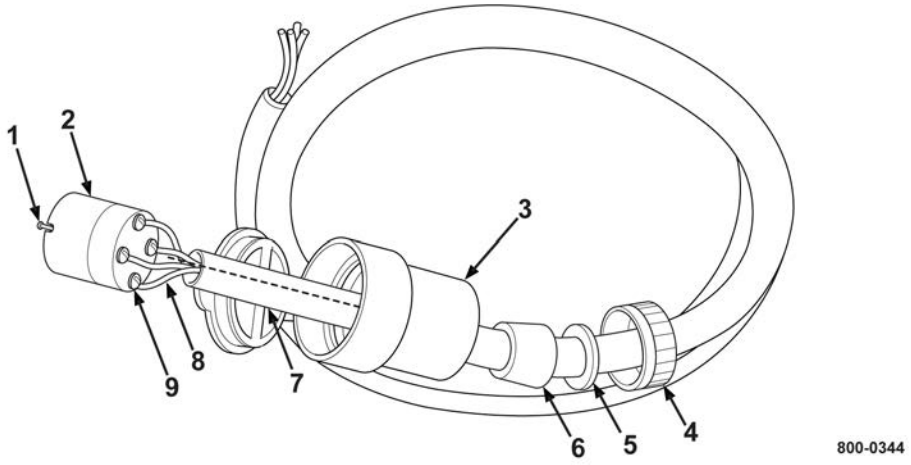


Figure 1. 25 ft Extension Power Cord Repair.

END OF TASK

ASSEMBLY

1. Slide power cord (Figure 1, Item 7) through bottom of enclosure (Figure 1, Item 3).
2. Insert four wires (Figure 1, Item 8) to backside of plug (Figure 1, Item 2). Tighten screws (Figure 1, Item 9). See wire connections (Figure 2).
3. Slide power cord (Figure 1, Item 7) and plug (Figure 1, Item 2) into enclosure (Figure 1 Item 3) so the screws (Figure 1, Item 1) enter face with threaded openings.
4. Tighten both screws (Figure 1, Item 1).
5. Slide nut (Figure 1, Item 4), bushing (Figure 1, Item 5), and water tight plug (Figure 1, Item 6) onto power cord (Figure 1, Item 7). Tighten nut (Figure 1, Item 4).

ASSEMBLY - Continued

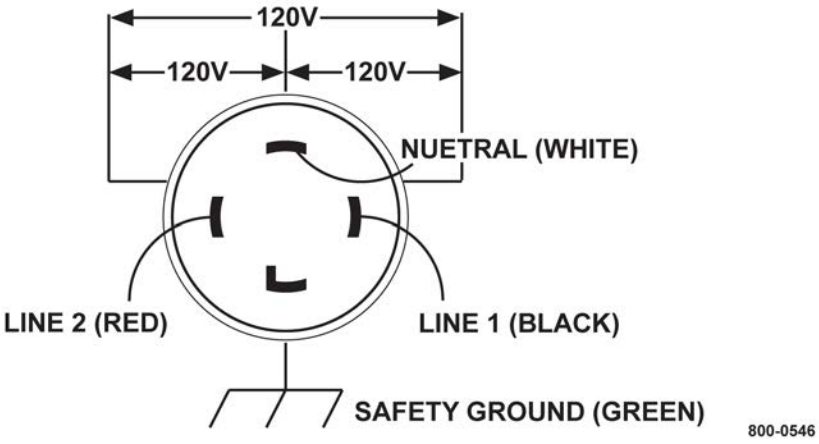


Figure 2. Wire Connections.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SINGLE POINT DISPENSING SYSTEM REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Vise, Machinist's 4 in. (WP 0191, Table 1, Item 13)
Wrench, Adjustable 18 in. (WP 0191, Table 1, Item 14)
Wrench, Pipe 10 in. (WP 0191, Table 1, Item 15)
Wrench, Pipe 18 in. (WP 0191, Table 1, Item 16)

Materials/Parts
Sealing Compound (WP 0190, Table 1, Item 12)

References
WP 0062
WP 0158, Figure 4

WARNING

- Wear eye protection when working on the Camel II.
- Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

This work package covers:

Disassembly and Assembly of Single Point Dispensing System.

DISASSEMBLY

NOTE

- Disassemble only the part needing to be repaired.
- For replacement of Split Ring and Lanyard refer to (WP 0062).

1. Remove protective cap (Figure 1, Item 8) from elbow (Figure 1, Item 1).
2. Remove elbow (Figure 1, Item 1) from ball valve (Figure 1, Item 2) by turning counter-clockwise until disconnected.
3. Remove ball valve (Figure 1, Item 2) from pipe nipple (Figure 1, Item 3) by turning counter-clockwise until disconnected.
4. Remove pipe nipple (Figure 1, Item 3) from reducing bushing (Figure 1, Item 4) by turning counter-clockwise until disconnected.
5. Remove reducing bushing (Figure 1, Item 4) from male quick disconnect (Figure 1, Item 5) by turning counter-clockwise until disconnected.
6. Remove circular gasket (Figure 1, Item 7) from female quick disconnect (Figure 1, Item 6) by hand.

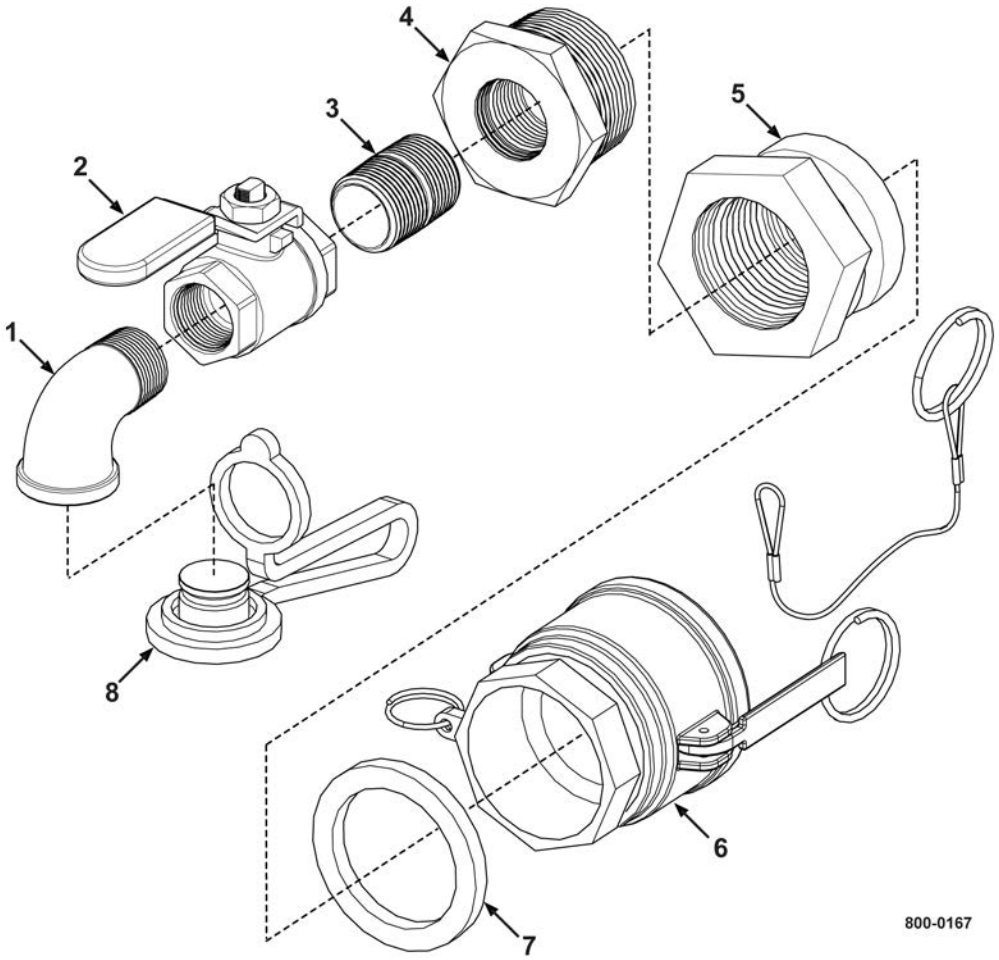


Figure 1. Single Point Dispensing System.

DISASSEMBLY - Continued

Table 1. Single Point Dispensing System.

1	Elbow Pipe, ¾ in. 90 Degree
2	Ball Valve 0.75 in. NPT
3	Nipple Pipe, 1.5 in. x3.0 in.
4	Bushing Pipe, Reducing 2 in. x0.75 in.
5	Coupling Half, Quick Disconnect, Male
6	Coupling Half, Quick Disconnect, Female
7	Gasket, Circular
8	Cap Protective, Dust and Moisture Seal

END OF TASK

ASSEMBLY

NOTE

- For replacement of Split Ring and Lanyard refer to (WP 0062).
- Clean threads of each plumbing fitting being reinstalled. Apply a new light coat of sealing compound around threads of plumbing fitting before re-installing.

1. Install protective cap (Figure 1, Item 8) onto elbow (Figure 1, Item 1).
2. Install elbow (Figure 1, Item 1) onto ball valve (Figure 1, Item 2) by turning clockwise, tighten firmly.
3. Install ball valve (Figure 1, Item 2) onto pipe nipple (Figure 1, Item 3) by turning clockwise, tighten firmly.
4. Install pipe nipple (Figure 1, Item 3) onto reducing bushing (Figure 1, Item 4) by turning clockwise, tighten firmly.
5. Install reducing bushing (Figure 1, Item 4) onto male quick disconnect (Figure 1, Item 5) by turning clockwise, tighten firmly.
6. Install circular gasket (Figure 1, Item 7) into female quick disconnect (Figure 1, Item 6) by hand.

END OF TASK

FOLLOW-ON MAINTENANCE

Place potable water into single point dispensing system. Check for leaks.

END OF TASK

END OF WORK PACKAGE

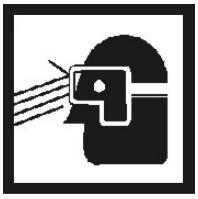
FIELD MAINTENANCE
LANYARD/SPLIT RING REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Screwdriver, Flat Tip (WP 0188, Table 2, Item 27)

References
WP 0159, Figure 5

WARNING



Wear eye protection when working on the Camel II. Failure to comply may result in injury to personnel.

This work package covers:

Removal and Installation of Lanyard/Split Ring.

REMOVAL

1. Rotate lanyard (Figure 1, Item 1) through split ring (Figure 1, Item 2) until lanyard is free.
2. Remove split ring (Figure 1, Item 2) from equipment, replace as needed.

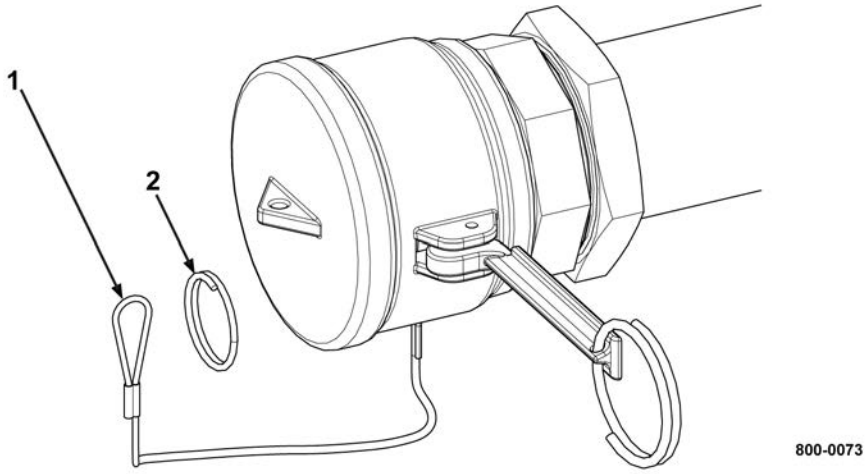


Figure 1. Lanyard/Split Ring Replacement.

END OF TASK

INSTALLATION

1. Rotate lanyard (Figure 1, Item 1) onto split ring (Figure 1, Item 2).
2. Install split ring (Figure 1, Item 2) onto equipment as needed.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SIX POINT DISPENSING SYSTEM REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Vise, Machinist's 4 in. (WP 0191, Table 1, Item 13)
Wrench, Pipe 10 in. (WP 0191, Table 1, Item 15)
Wrench, Pipe 18 in. (WP 0191, Table 1, Item 16)

Materials/Parts
Sealing Compound (WP 0190, Table 1, Item 12)

References
WP 0062
WP 0160, Figure 6

WARNING

- Wear eye protection when working on the Camel II.
- Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Disassembly and Assembly of Six Point Dispensing System with Mount.

DISASSEMBLY

NOTE

Disassemble only the parts needing to be repaired.

1. Remove six nuts (Figure 1, Item 3) from three U-bolts (Figure 1, Item 1).
2. Remove three U-bolts and mount plate (Figure 1, Item 2) from six point dispensing system (Figure 1, Item 4).

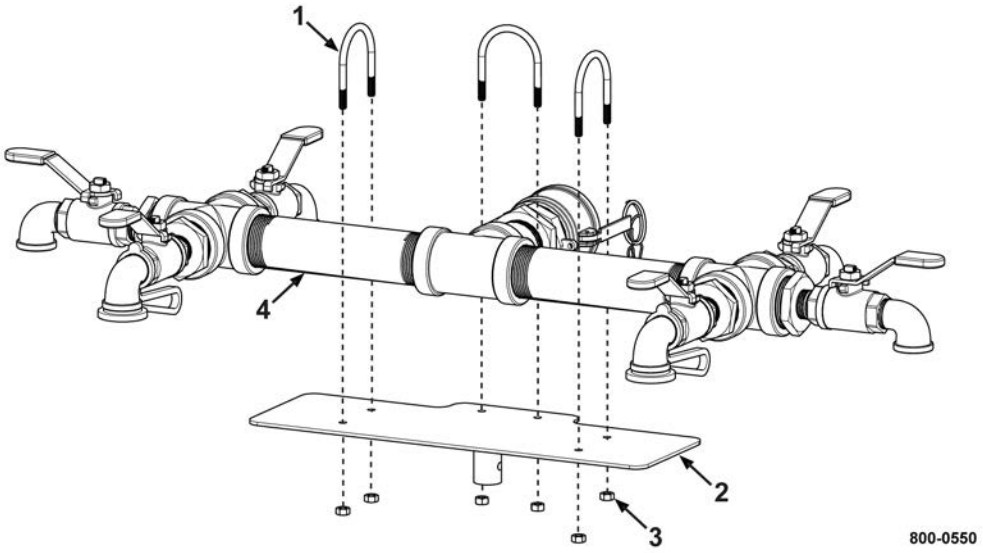


Figure 1. Six Point Dispensing System with Mount.

3. Remove protective cap (Figure 2, Item 15) from elbow (Figure 2, Item 1).
4. Remove elbow (Figure 2, Item 1) from ball valve (Figure 2, Item 2) by turning counter-clockwise until disconnected.
5. Remove ball valve (Figure 2, Item 2) from pipe nipple (Figure 2, Item 3) by turning counter-clockwise until disconnected.
6. Remove pipe nipple (Figure 2, Item 3) from reducing bushing (Figure 2, Item 4) by turning counter-clockwise until disconnected.
7. Remove reducing bushing (Figure 2, Item 4) from cross pipe (Figure 2, Item 5) by turning counter-clockwise until disconnected.
8. Remove circular gasket (Figure 2, Item 6) from female quick disconnect (Figure 2, Item 7) by hand.
9. For split ring (Figure 2, Item 8) and lanyard (Figure 2, Item 9), refer to (WP 0062).
10. Remove quick disconnect, male (Figure 2, Item 10) from reducing bushing (Figure 2, Item 11) by turning counter-clockwise until disconnected.
11. Remove reducing bushing (Figure 2, Item 11) from pipe nipple (Figure 2, Item 12) by turning counter-clockwise until disconnected.
12. Remove pipe nipple (Figure 2, Item 12) from tee pipe (Figure 2, Item 13) by turning counter-clockwise until disconnected.
13. Remove tee pipe (Figure 2, Item 13) from 8 in. pipe nipple (Figure 2, Item 14) by turning counter-clockwise until disconnected.

DISASSEMBLY - Continued

14. Remove 8 in. pipe nipple (Figure 2, Item 14) from cross pipe (Figure 2, Item 5) by turning counter-clockwise until disconnected.

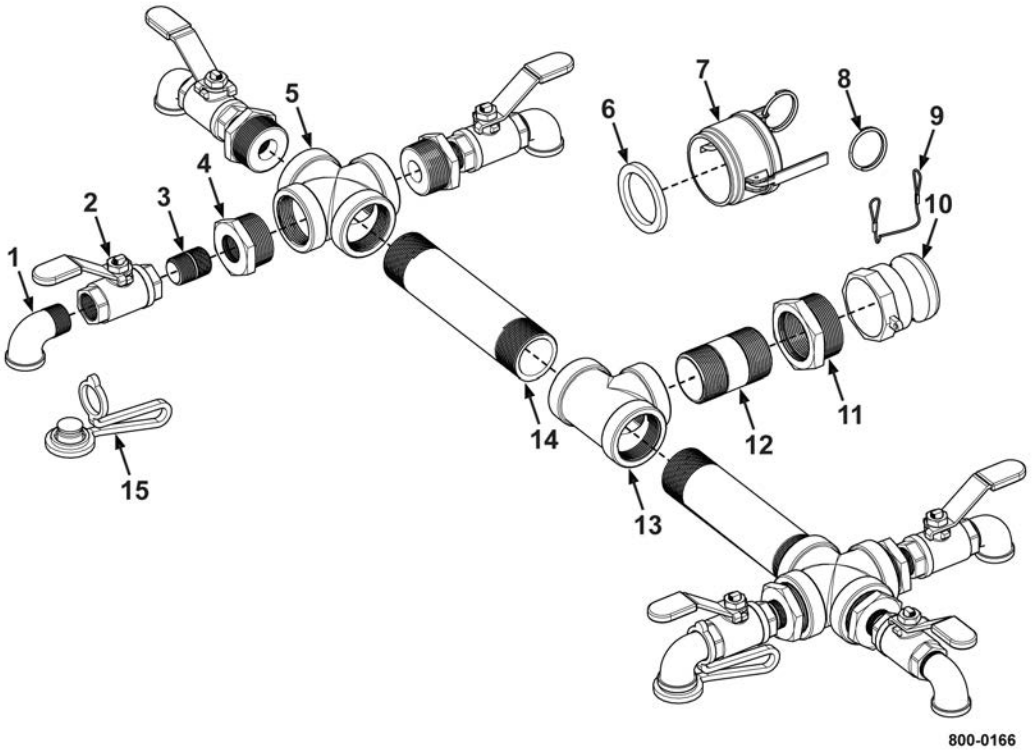


Figure 2. Six Point Dispensing System.

END OF TASK

ASSEMBLY

NOTE

Clean all pipe threads of parts to be re-assembled. Apply a new light coat of sealant around threads before re-installing.

1. Install protective cap (Figure 2, Item 15) onto elbow (Figure 2, Item 1).
2. Install elbow (Figure 2, Item 1) onto ball valve (Figure 2, Item 2) by turning clockwise.
3. Install ball valve (Figure 2, Item 2) onto pipe nipple (Figure 2, Item 3) by turning clockwise.
4. Install pipe nipple (Figure 2, Item 3) onto reducing bushing (Figure 2, Item 4) by turning clockwise.
5. Install reducing bushing (Figure 2, Item 4) onto cross pipe (Figure 2, Item 5) by turning clockwise.
6. Install circular gasket (Figure 2, Item 6) into female quick disconnect (Figure 2, Item 7).
7. For split ring (Figure 2, Item 8) and lanyard (Figure 2, Item 9) replacement, refer to (WP 0062).
8. Install quick disconnect, male (Figure 2, Item 10) onto reducing bushing (Figure 2, Item 11) by turning clockwise.

ASSEMBLY - Continued

9. Install reducing bushing (Figure 2, Item 11) onto pipe nipple (Figure 2, Item 12) by turning clockwise.
10. Install pipe nipple (Figure 2, Item 12) onto tee pipe (Figure 2, Item 13) by turning clockwise.
11. Install 8 in. pipe nipple (Figure 2, Item 14) into cross pipe (Figure 2, Item 5) by turning clockwise.
12. Install tee pipe (Figure 2, Item 13) onto 8 in. pipe nipple (Figure 2, Item 14) by turning clockwise.
13. Install three U-bolts (Figure 1, Item 1) onto six point dispensing system (Figure 1, Item 4).
14. Install mount plate (Figure 1, Item 2) onto three U-bolts (Figure 1, Item 1), then install six nuts (Figure 1, Item 3) onto U-bolts (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Place potable water into six point dispensing system. Check for leaks.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISPENSING STAND ASSEMBLY REPAIR

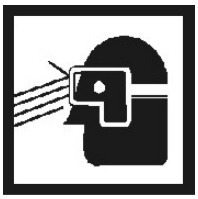
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0062

Materials/Parts
Cotter Pin, .063 DIA (WP 0161, Figure 7, Item 8)

WARNING



Wear eye protection when working on the Camel II. Failure to comply may result in serious injury to personnel.

NOTE

Refer to (WP 0062) for all Lanyard and Split ring replacement procedures.

This work package covers:

Disassembly and Assembly of Dispensing Stand Assembly.

DISASSEMBLY

1. Remove quick release pin (Figure 1, Item 1) from outer tube (Figure 1 Item 2).
2. Slide inner tube (Figure 1, Item 3) from outer tube (Figure 1, Item 2).

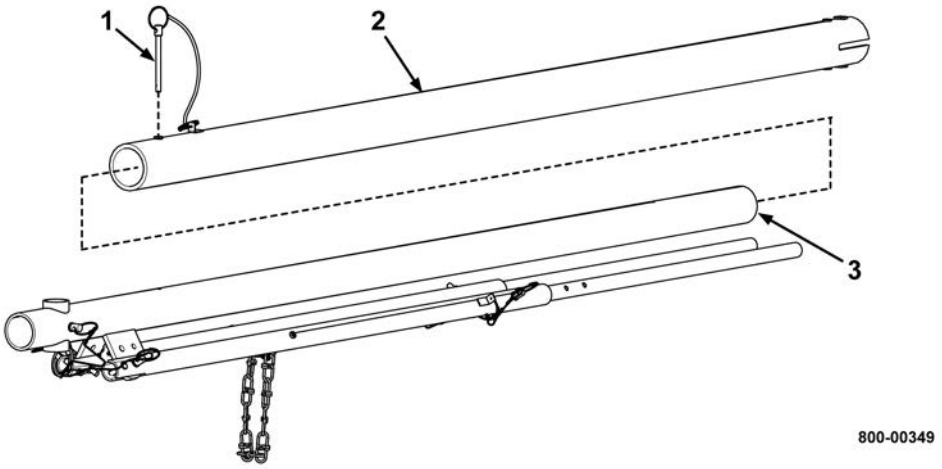


Figure 1. Outer Tube.

3. Remove quick release pin (Figure 2, Item 1) from each upper bi-pod support leg (Figure 2, Item 2) and rotate support legs down.

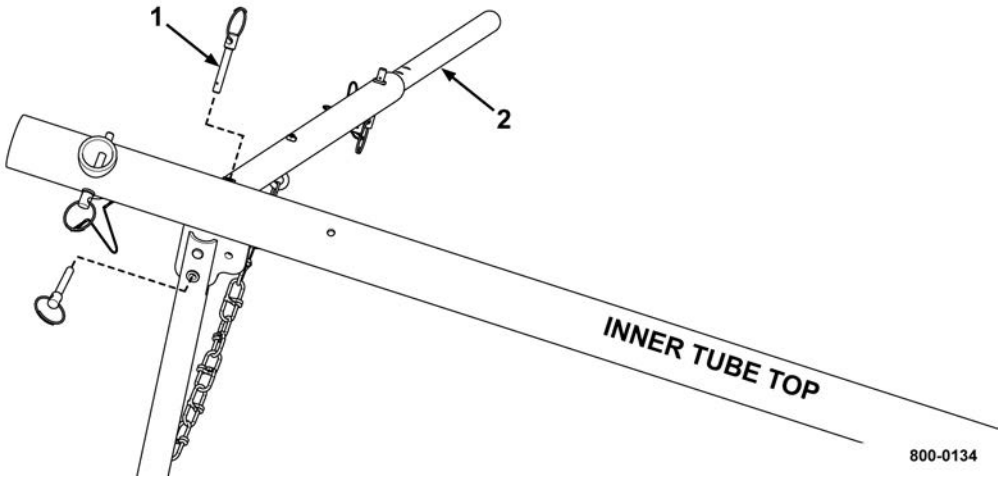


Figure 2. Support Legs.

DISASSEMBLY - Continued

4. Remove each detachable link (Figure 3, Item 1) from double loop chain (Figure 3, Item 2) and eye bolt (Figure 3, Item 3).
5. Remove nut and eye bolt (Figure 3, Item 3) from upper bi-pod support legs (Figure 3, Item 4).

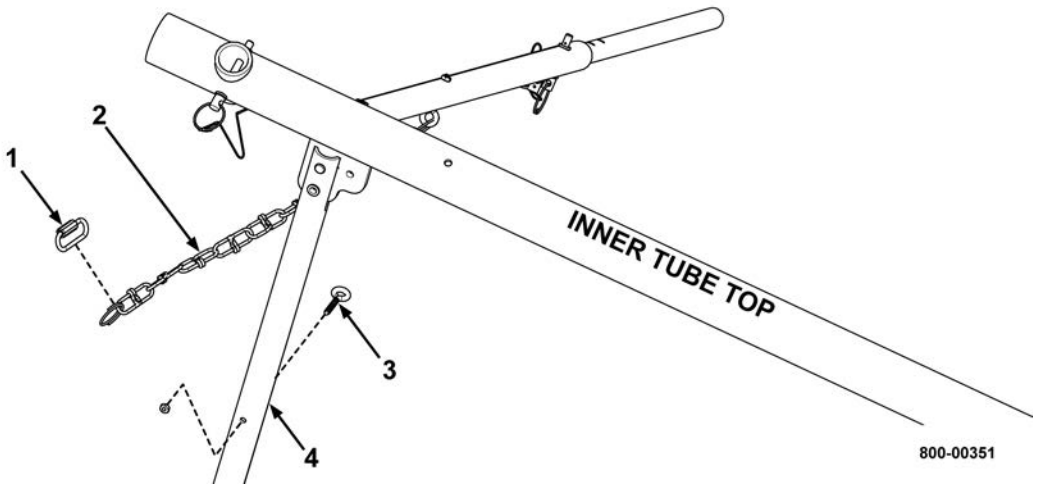


Figure 3. Detachable Link and Eyebolt.

NOTE

Note position of bi-pod support legs prior to disassembly.

6. Remove cotter pin (Figure 4, Item 1), straight pin (Figure 4, Item 2), and upper bi-pod support leg (Figure 4, Item 3) from inner tube (Figure 4, Item 4). Discard cotter pin.

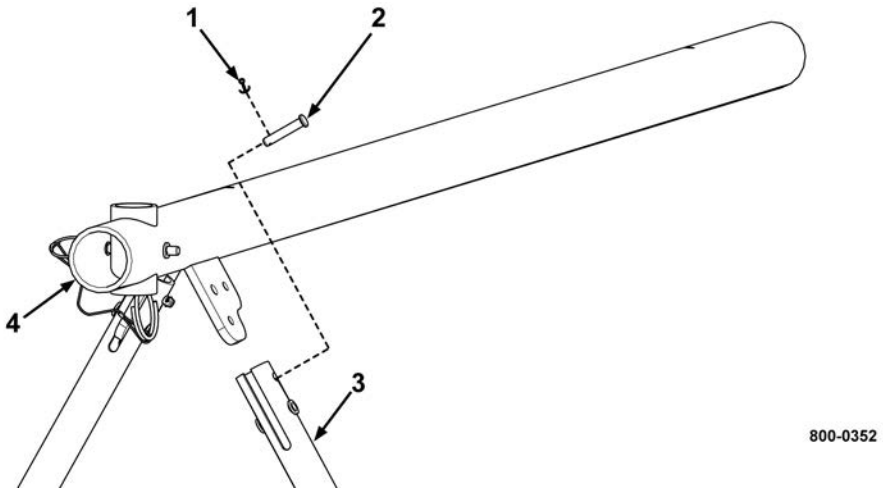


Figure 4. Bi-pod Support Leg.

DISASSEMBLY - Continued

7. Remove quick release pin (Figure 5, Item 1) from each upper bi-pod support leg (Figure 5, Item 2) and slide lower bi-pod support leg (Figure 5, Item 3) from upper bi-pod support leg.

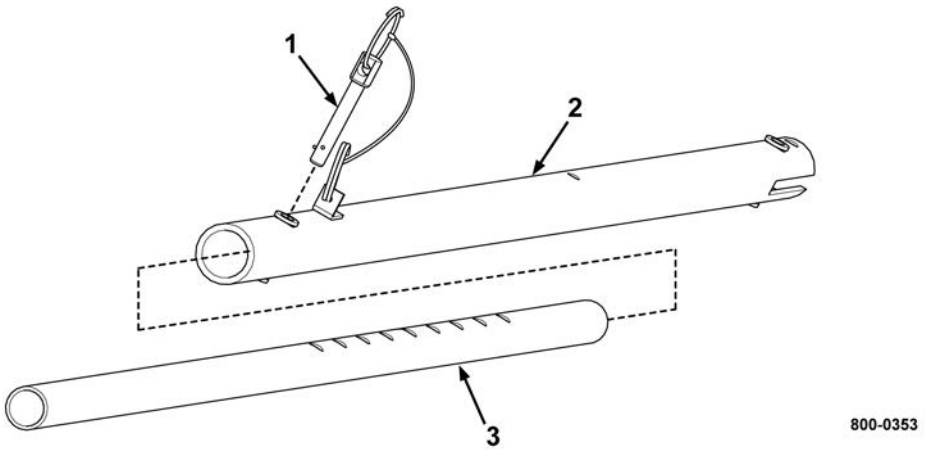


Figure 5. Lower Bi-pod Support Leg.

END OF TASK

ASSEMBLY

1. Slide lower bi-pod support leg (Figure 5, Item 3) into upper bi-pod support leg (Figure 5, Item 2) and replace quick release pin (Figure 5, Item 1).

NOTE

Install upper bi-pod support leg as noted during disassembly.

2. Place upper bi-pod support leg (Figure 4, Item 3) onto inner tube (Figure 4, Item 4), place straight pin (Figure 4, Item 2) through upper bi-pod support leg and install new cotter pin (Figure 4, Item 1).
3. Install eye bolt and nut (Figure 3, Item 3) into upper bi-pod support leg (Figure 3, Item 4).
4. Install detachable link (Figure 3, Item 1) onto eye bolt (Figure 3, Item 3), then place double loop chain (Figure 3, Item 2) onto detachable link.
5. Rotate bi-pod support legs (Figure 2, Item 2) up and replace quick release pin (Figure 2, Item 1).
6. Slide inner tube (Figure 1, Item 3) into outer tube (Figure 1, Item 2) and replace quick release pin (Figure 1, Item 1).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MOUNTING PIN ASSEMBLY REPLACEMENT

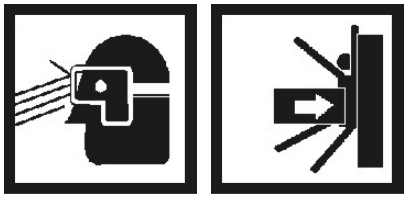
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Socket, Socket Wrench, 3-½ in. Long, 1-½ in.x ¾ in. Drive (WP 0189, Table 1)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Water Tank Assembly Removed (WP 0074)

References
WP 0062
WP 0162, Figure 8

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- There are four mounting pin assemblies, each is removed and installed the same way.
- For replacement of Split Ring and Lanyard refer to (WP 0062).

This work package covers:

Removal and Installation of Mounting Pin Assembly.

REMOVAL

1. Remove nut (Figure 1, Item 1) and washer (Figure 1, Item 2) from bottom portion of water tank mounting pin (Figure 1, Item 3).
2. Remove water tank mounting pin (Figure 1, Item 3) from deck platform (Figure 1, Item 4).

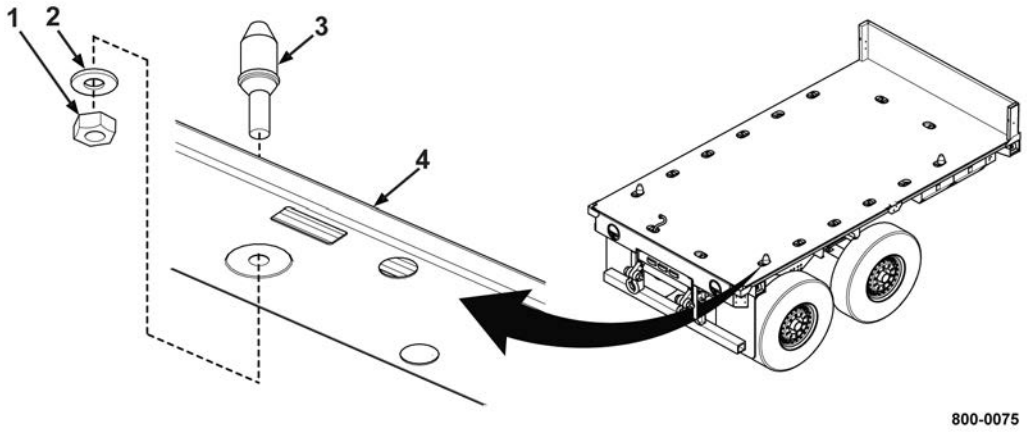


Figure 1. Mounting Pin Assembly Replacement.

END OF TASK

INSTALLATION

NOTE

Tightening and torquing of mounting pin assembly is completed in Follow-On Maintenance.

1. Install water tank mounting pin (Figure 1, Item 3) into deck platform (Figure 1, Item 4).
2. Install washer (Figure 1, Item 2) and nut (Figure 1, Item 1) onto water tank mounting pin (Figure 1, Item 3). Do not tighten.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Water Tank Assembly (WP 0074).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRING, TRAILER GROUND REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Insulating Compound, Electrical (WP 0190, Table 1, Item 9)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0152
WP 0162, Figure 8

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and intervehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Wiring, Trailer Ground.

REMOVAL

1. Locate green wire 2AW2 (Figure 1, Item 1) coming from bottom of heat trace conduit (Figure 1, Item 2) into electrical control box (Figure 1, Item 3).
2. Remove rubber grommet (Figure 1, Item 4).
3. Disconnect green wire 2AW2 (Figure 1, Item 1) from ground terminal lug (Figure 1, Item 5).

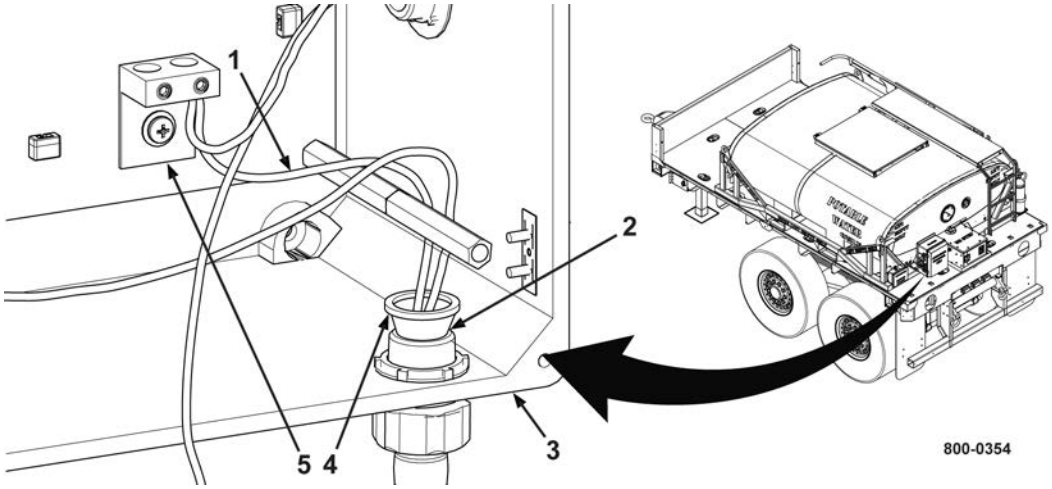


Figure 1. Green Wire Disconnection from Lug.

4. From underneath the trailer deck locate the green wire 2AW2 (Figure 2, Item 1) as it comes out of the heat trace conduit (Figure 2, Item 2).
5. Slowly pull wire through the heat trace conduit (Figure 2, Item 2) until it is free.
6. Remove green wire 2AW2 (Figure 2, Item 1) from wire shield (Figure 2, Item 3).

NOTE

Green ground wire 2AW2 is grounded at rear of the trailer.

7. Remove nut (Figure 2, Item 4) and lock washer (Figure 2, Item 5) (discard lock washer). Refer to TM 9-2330-394-13&P for replacement lock washer.

REMOVAL - Continued

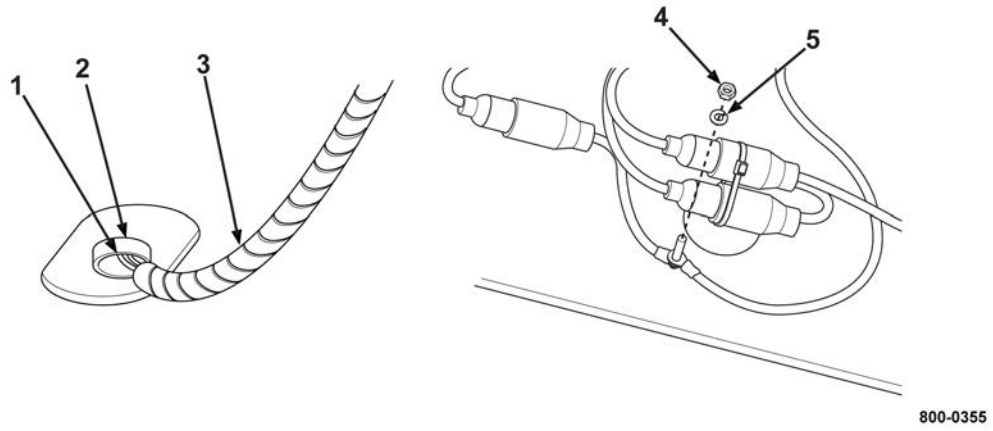


Figure 2. Green Wire Removal.

END OF TASK

INSTALLATION

NOTE

Refer to electrical general maintenance (WP 0152) for wire repair.

1. Route new green wire 2AW2 (Figure 3, Item 1) through bottom of heat trace conduit (Figure 3, Item 2).
2. From top, route green wire 2AW2 (Figure 3, Item 1) through wiring shield (Figure 3, Item 3).
3. Connect green wire 2AW2 (Figure 3, Item 1) to ground terminal lug (Figure 3, Item 4).

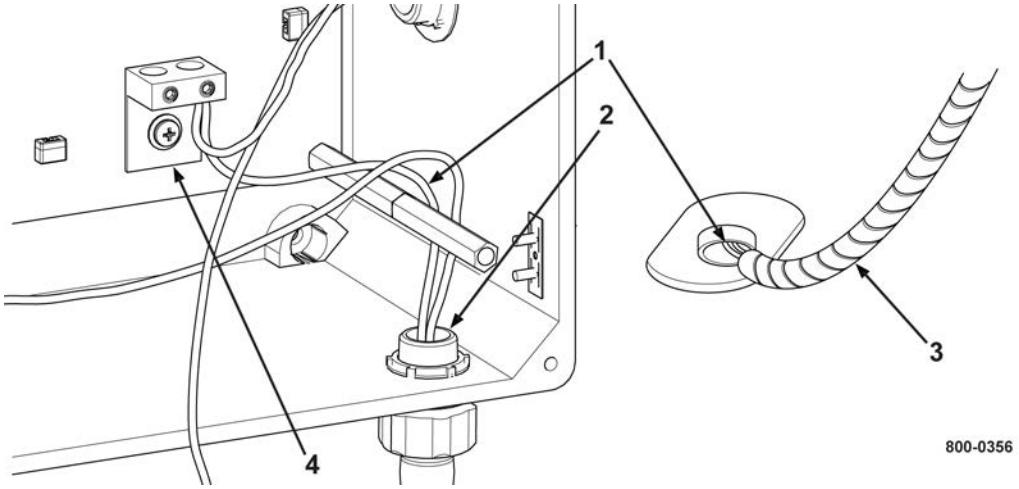


Figure 3. Green Wire Installation.

INSTALLATION - Continued

4. Underneath trailer deck install male connector plug and female connector plug (Figure 4, Item 1).
5. Place small amount of insulating compound inside female connector plug (Figure 4, Item 1), then connect connector plugs.
6. Trim green wire 2AW2 (Figure 4, Item 2) to proper length and install end terminal (Figure 4, Item 3).
7. Place end terminal (Figure 4, Item 3) on ground bolt (Figure 4, Item 4), install new lock washer (Figure 4, Item 5), nut (Figure 4, Item 6), and tighten firmly. Install grommet if removed.

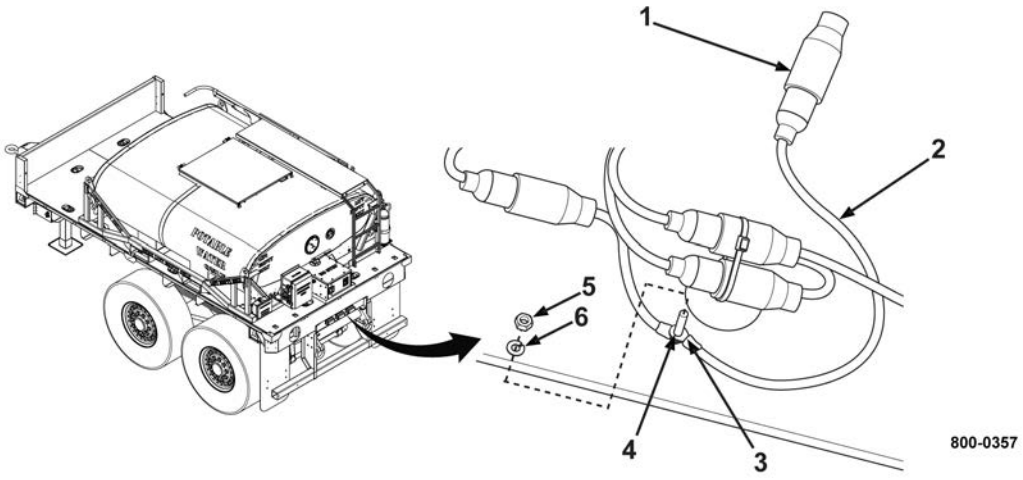


Figure 4. Green Wire to Ground Terminal Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRING HARNESS, CONVERTER TO FUSE LINK REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Insulating Compound, Electrical (WP 0190, Table 1, Item 9)
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0152
WP 0162, Figure 8

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Converter Box Open (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting.
- Refer to electrical wiring diagram (FO-1), electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Wiring Harness, Converter to Fuse Link.

REMOVAL

1. Remove nut (Figure 1, Item 1) and lock washer (Figure 1, Item 2) (discard lock washer) and converter to fuse link harness 2AW1 (Figure 1, Item 3) from circuit breaker #7 roadside pin (Figure 1, Item 4). Refer to TM 9-2330-394-13&P for replacement lock washer.
2. Unscrew box connector (Figure 1, Item 5) and slide down wiring shield (Figure 1, Item 6).

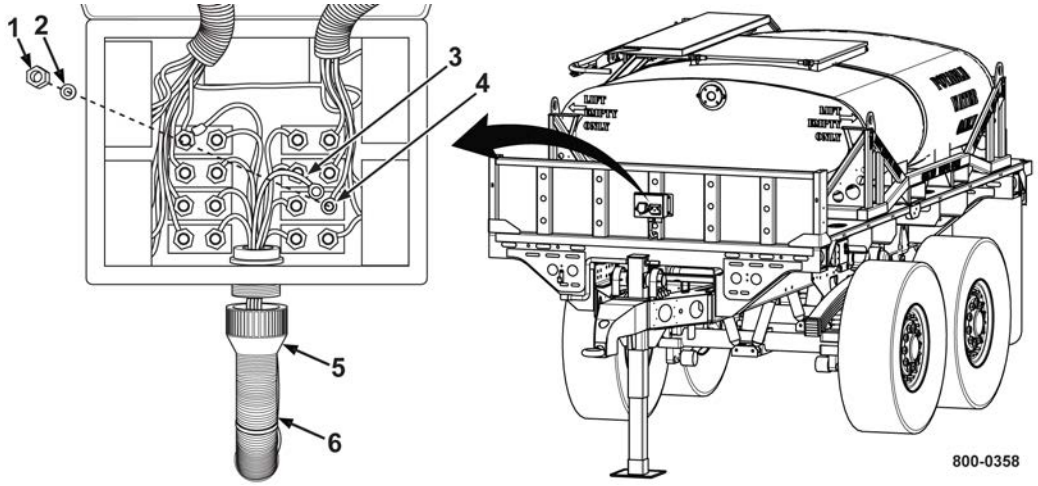


Figure 1. Converter to Fuse Link Harness to Circuit Breaker Disconnection.

3. Locate converter to fuse link harness 2AW1 (Figure 2, Item 1) underneath trailer deck where it attaches to fuse link (Figure 2, Item 2).
4. Remove cable ties as needed.

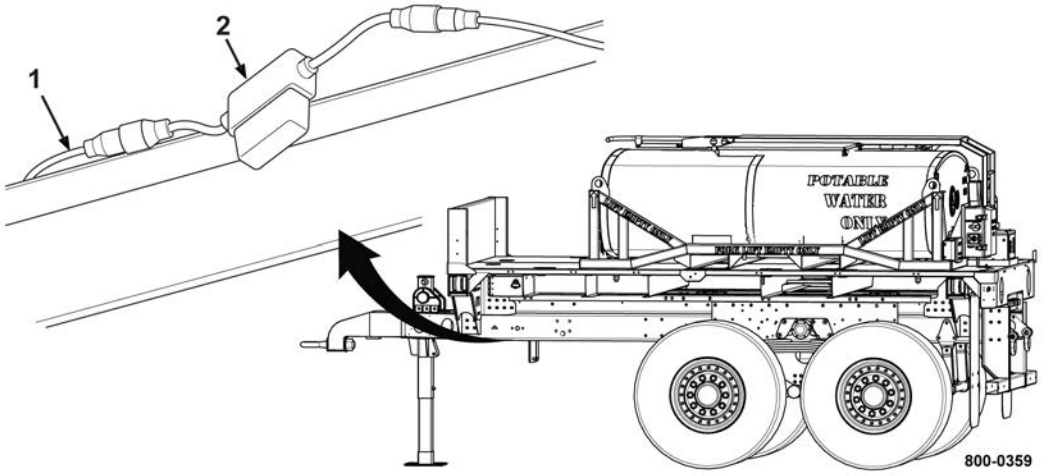


Figure 2. Converter to Fuse Link to Fuse Link Disconnection.

REMOVAL - Continued

5. Disconnect connector plug (Figure 3, Item 1) from fuse link (Figure 3, Item 2), remove converter to fuse link harness (Figure 3, Item 3) from converter box wiring harness shield (Figure 3, Item 4).

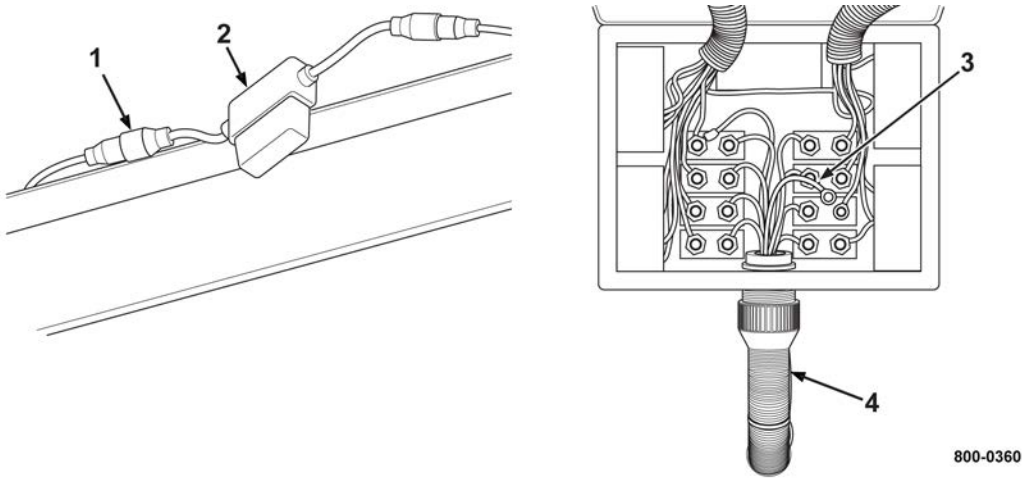


Figure 3. Converter to Fuse Link Harness from Harness Shield Removal.

END OF TASK

INSTALLATION

NOTE

Refer to electrical general maintenance (WP 0152) for wire repair.

1. Route converter to fuse link harness 2AW1 (Figure 4, Item 1) through converter box wiring harness shield (Figure 4, Item 2) into converter box (Figure 4, Item 3).

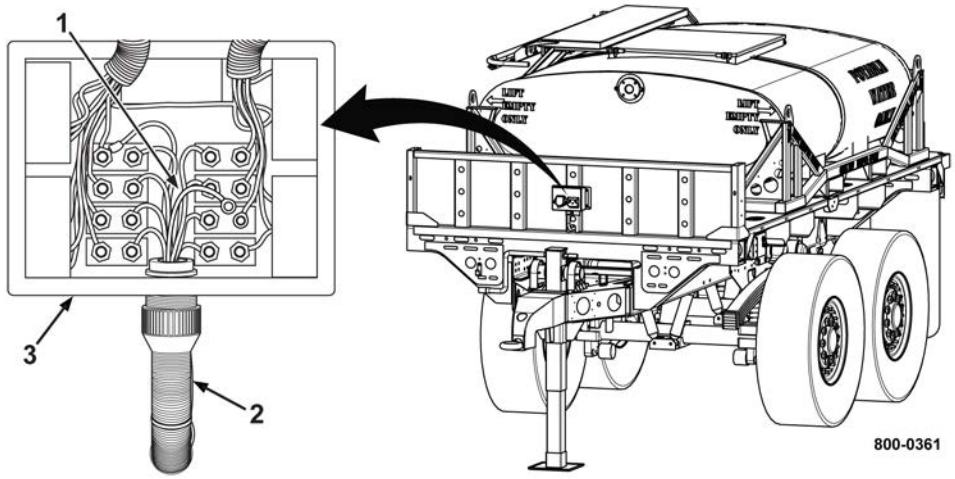


Figure 4. Route New Power Wire.

INSTALLATION - Continued

2. Replace wire ties as needed.
3. Install converter to fuse link harness 2AW1 (Figure 5, Item 1) by placing terminal end (Figure 5, Item 2) onto circuit breaker #7 roadside pin (Figure 5, Item 3), install new lock washer (Figure 5, Item 4) and nut (Figure 5, Item 5).

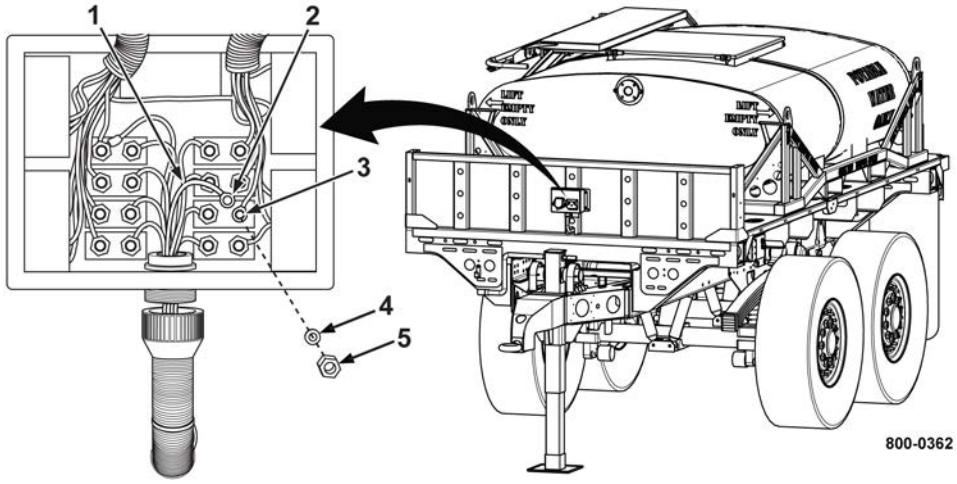


Figure 5. Wire to Circuit Breaker Connection.

4. Place small amount of insulating compound inside fuse link female connector plug (Figure 6, Item 1), connect converter to fuse link harness 2AW1 (Figure 6, Item 3) to fuse link (Figure 6, Item 2).

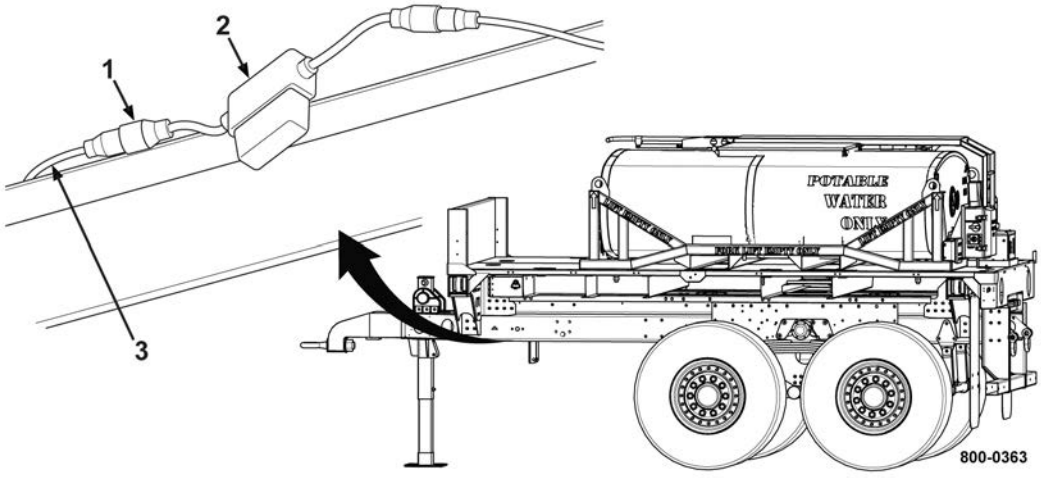


Figure 6. Converter to Fuse Link to Fuse Link Connection .

INSTALLATION - Continued

5. Reconnect box connector (Figure 7, item 1) onto threads of box connector (Figure 7, Item 2), tighten firmly.

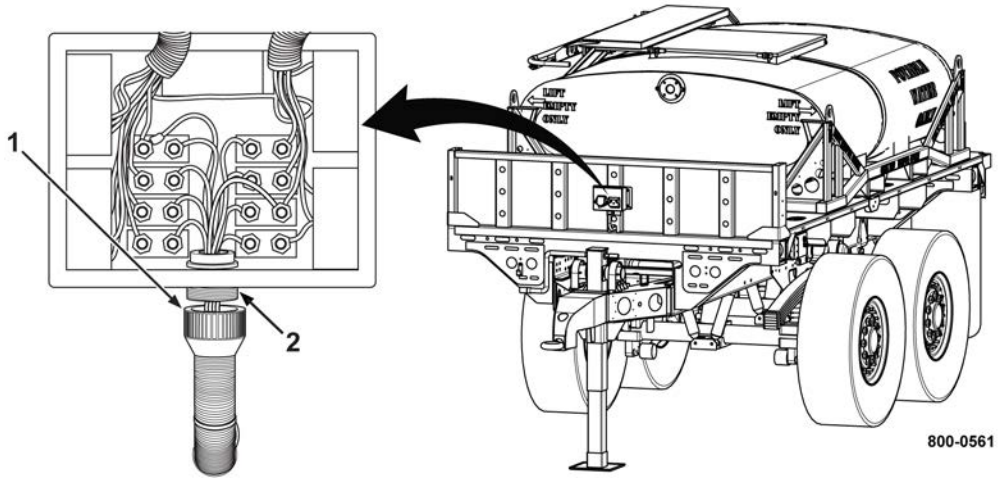


Figure 7. Box Connector Nut Connection.

END OF TASK

FOLLOW-ON MAINTENANCE

Converter box closed and secured (TM 9-2330-394-13&P).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
FUSE LINK TO ELECTRICAL JUNCTION WIRING REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Insulating Compound, Electrical (WP 0190, Table 1, Item 9)
Wire Tie, Black (WP 0190, Table 1, Item 24)

Personnel Required
Two

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0152
WP 0162, Figure 8

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Fuse Link to Electrical Junction Wiring.

REMOVAL

1. In electrical control box (Figure 1, Item 1) coming from the heat trace conduit (Figure 1, Item 2) locate power wire 2AW1 (Figure 1, Item 3).
2. Remove wire ties as needed.
3. Disconnect power wire 2AW1 (Figure 1, Item 3) from heat trace toggle switch pin #4 (Figure 1, Item 4).

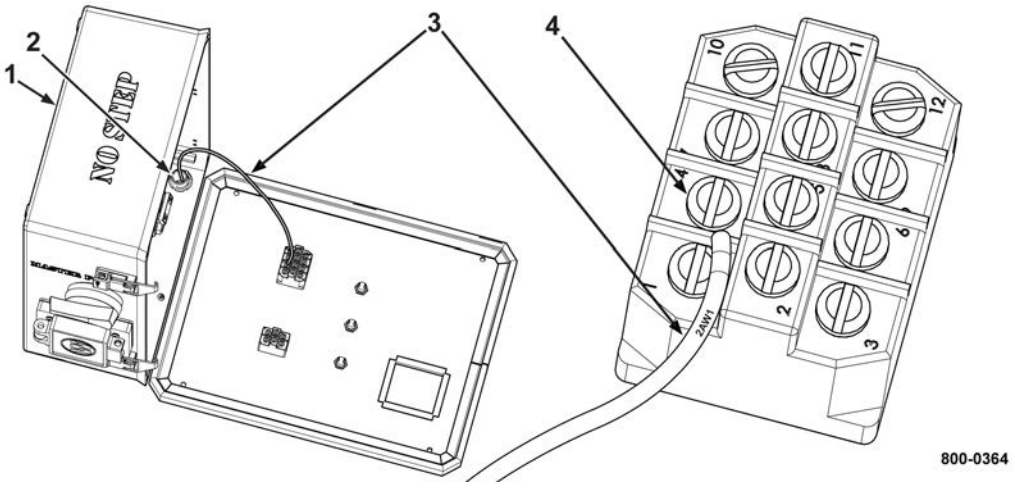


Figure 1. Power Wire 2AW1 to Heat Trace Toggle Switch Disconnection.

4. From underneath the trailer deck locate the power wire 2AW1(Figure 2, Item 1) as it comes out of the heat trace conduit (Figure 2, Item 2).
5. Slowly pull power wire 2AW1 through the heat trace conduit (Figure 2, Item 2) until it is free.

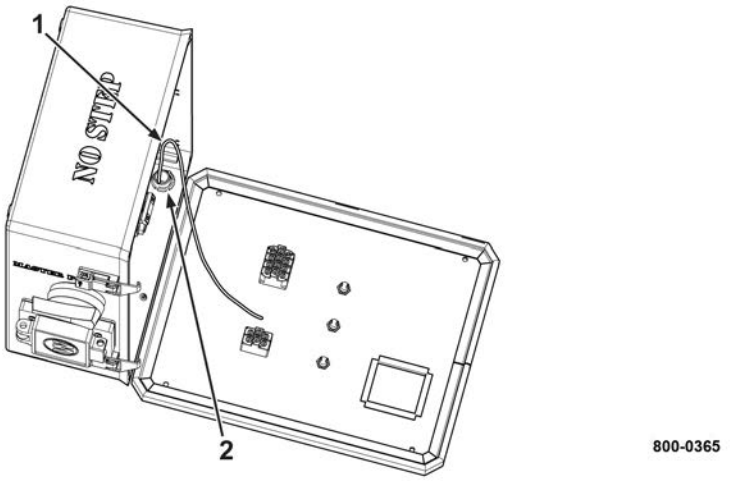


Figure 2. Power Wire 2AW1 from Heat Trace Conduit Removal.

6. Remove power wire 2AW1 (Figure 3, Item 1) and wire shield (Figure 3, Item 2) as it runs along underside of trailer to the fuse link (Figure 3, Item 3).
7. Disconnect power wire 2AW1 (Figure 3, Item 1) from the fuse link (Figure 3, Item 3).

REMOVAL - Continued

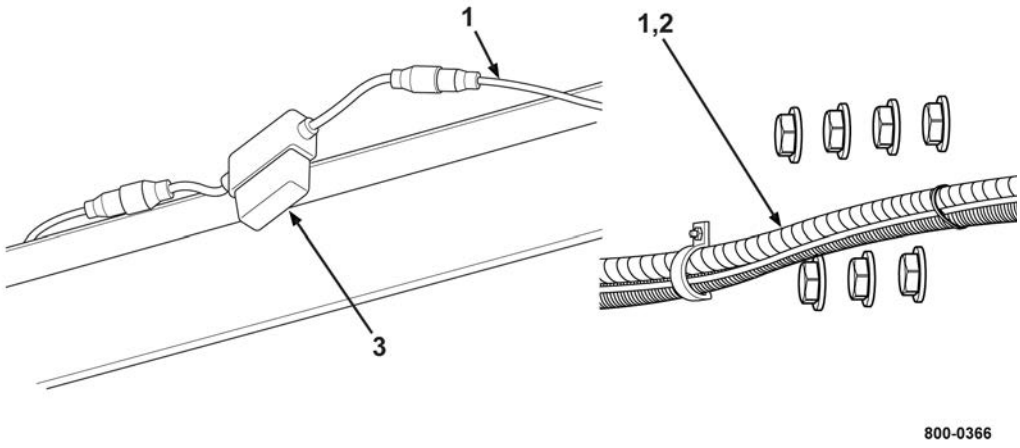


Figure 3. Power Wire 2AW1 at Fuse Link Disconnection.

END OF TASK

INSTALLATION

1. Install wire shield (Figure 4, Item 1) from fuse link (Figure 4, Item 2) along underside of trailer toward the rear of the trailer.

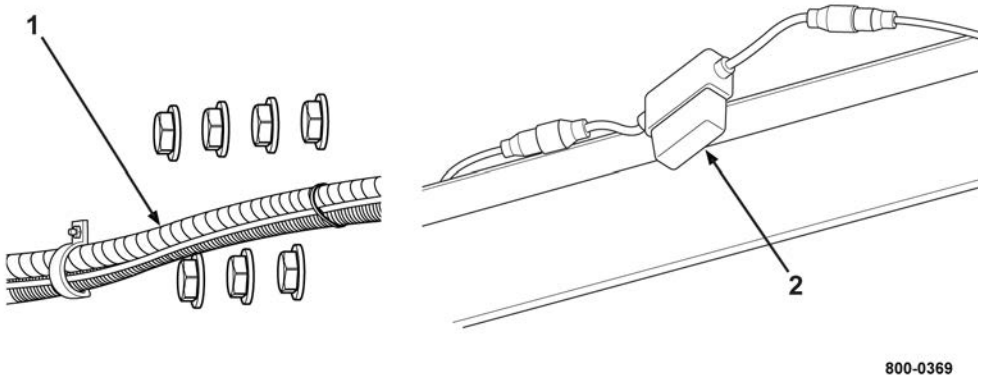


Figure 4. Wire Shield Routing.

INSTALLATION - Continued

2. Apply wire ties as needed.
3. Place small amount of insulating compound inside fuse link female connector plug (Figure 5, Item 1), then connect connector plugs at fuse link (Figure 5, Item 2)..

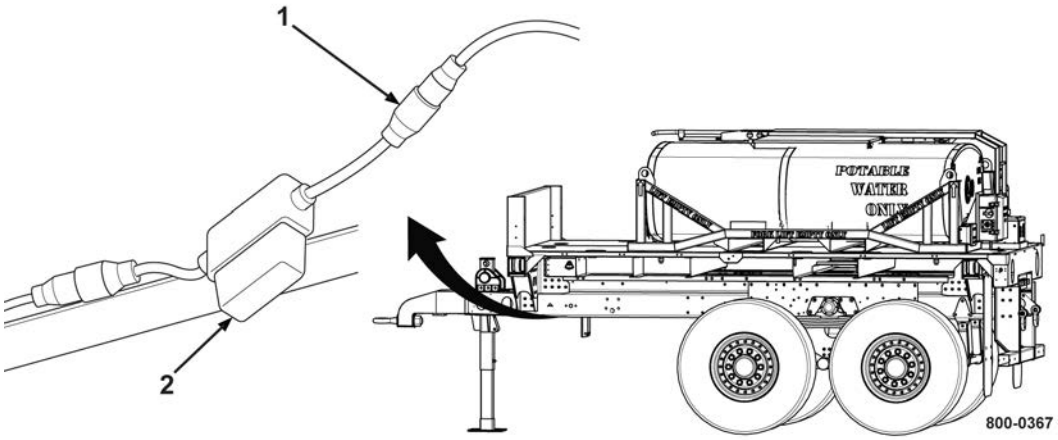


Figure 5. Connector Plug Installation.

4. Route new power wire 2AW1 (Figure 6, Item 1) through bottom of heat trace conduit (Figure 6, Item 2) into electrical control box (Figure 6, Item 3).

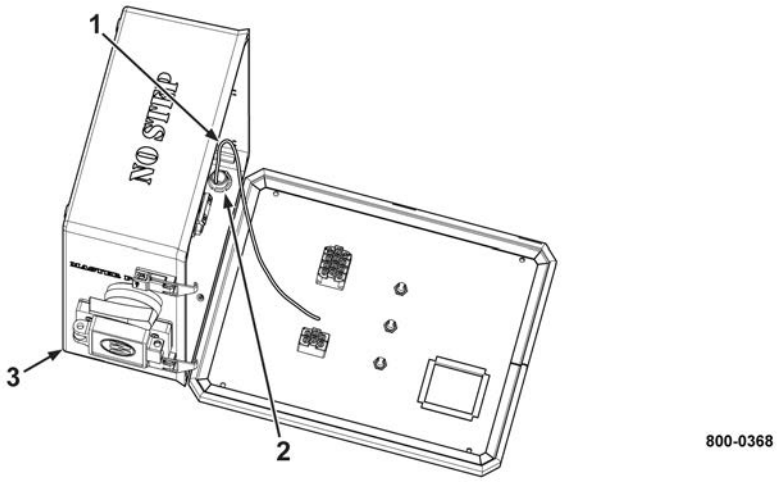


Figure 6. Power Wire 2AW1 through Heat Trace Conduit.

INSTALLATION - Continued

5. Install end terminal (Figure 7, Item 1) on heat trace toggle switch pin #4 (Figure 7, Item 2).

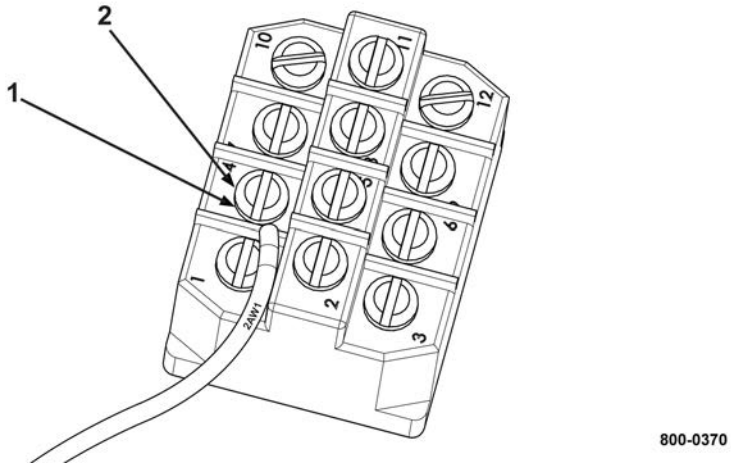


Figure 7. Power to Heat Trace Toggle Switch Connection.

6. Install wire ties as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRING FUSE LINK REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Insulating Compound, Electrical (WP 0190, Table 1, Item 9)

References
WP 0162, Figure 8

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Ensure all wires are properly marked before disconnecting.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Wiring Fuse Link.

REMOVAL

1. Locate fuse link (Figure 1, Item 1) underneath trailer deck at front of trailer.
2. Remove cable ties as needed.
3. Disconnect female connector plugs (Figure 1, Item 2) at each end fuse link (Figure 1, Item 1).

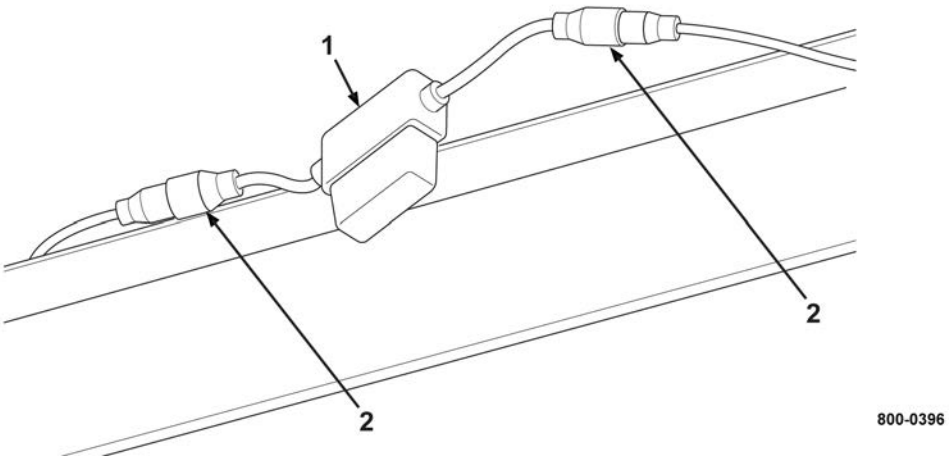


Figure 1. Wiring Fuse Link Removal.

END OF TASK

DISASSEMBLY

1. Remove environmental cap (Figure 2, Item 1) from fuse link (Figure 2, Item 2).
2. Remove 4 amp fuse (Figure 2, Item 3) from fuse link (Figure 2, Item 2).

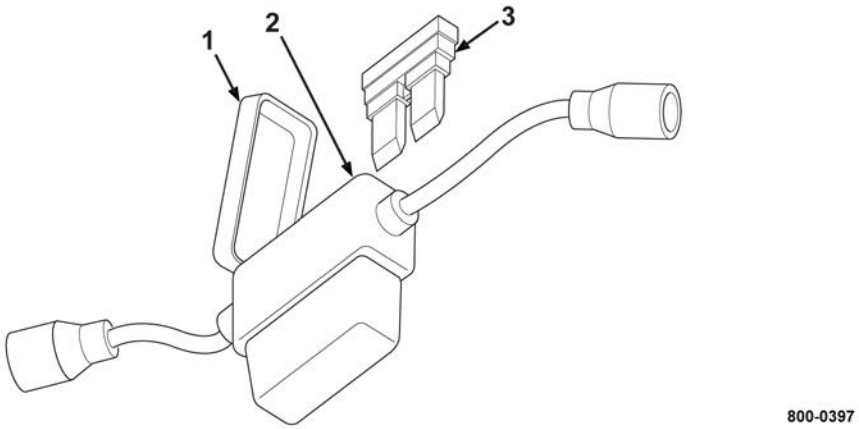


Figure 2. Wiring Fuse Link Disassembly and Assembly.

END OF TASK

ASSEMBLY

1. Install 4 amp fuse (Figure 2, Item 3) to fuse link (Figure 2, Item 2).
2. Install environmental cap (Figure 2, Item 1) to fuse link (Figure 2, Item 2).

END OF TASK

INSTALLATION

1. Place small amount of insulating compound inside fuse link female connector plugs (Figure 3, Item 1).
2. Connect convertor to fuse link harness (Figure 3, Item 2) to fuse link (Figure 3, Item 3).
3. Connect fuse link (Figure 3, Item 3) to electrical junction harness (Figure 3, Item 4).

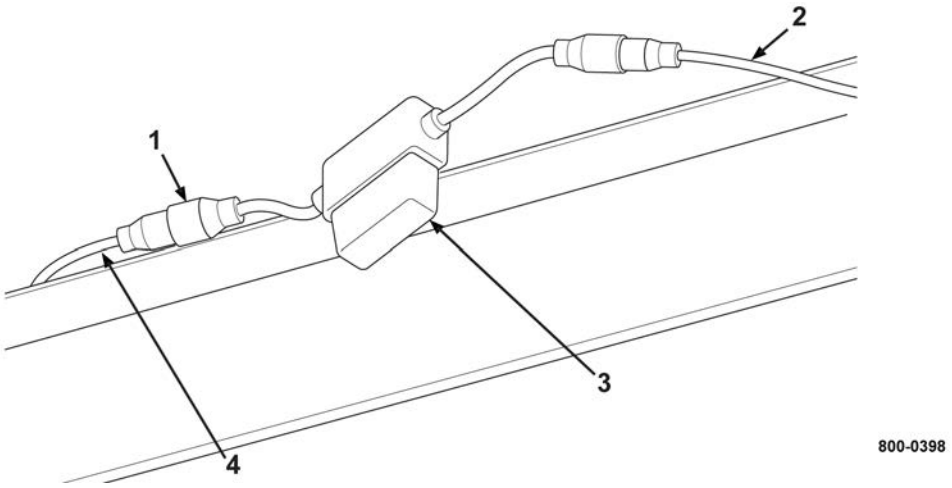


Figure 3. Wiring Fuse Link Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE HOUSING DECK SKIRT REPLACEMENT

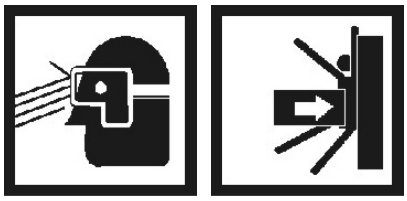
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
Drill Set, Twist, 1/16 to 1/2 in. (WP 0191, Table 1, Item 5)
Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
Rivet, 3/16 in. DIA, 0.5 in. GRIP (WP 0162, Figure 8, Item 32)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Discharge Box Assembly Removed (WP 0140)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may result in damage to equipment.

This work package covers:

Removal and Installation of Discharge Housing Deck Skirt.

REMOVAL

1. Remove rivets (Figure 1, Item 1) that connect discharge housing deck skirt (Figure 1, Item 2) to trailer deck (Figure 1, Item 3).
2. Remove deck skirt (Figure 1, Item 2) from trailer deck (Figure 1, Item 3).

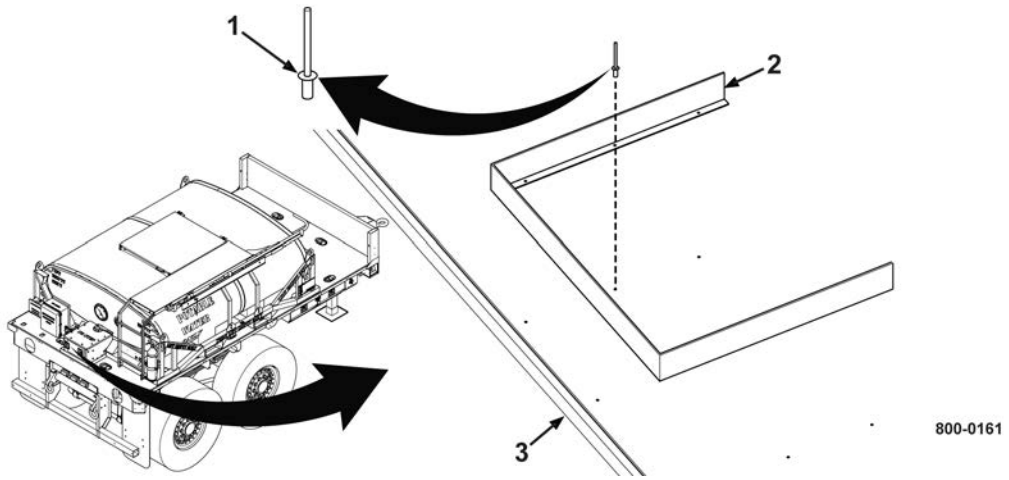


Figure 1. Discharge Housing Deck Skirt Replacement.

END OF TASK

INSTALLATION

1. Place deck skirt (Figure 1, Item 2) on trailer deck (Figure 1, Item 3).
2. Install rivets (Figure 1, Item 1) that connect discharge housing deck skirt (Figure 1, Item 2) to trailer deck (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Discharge Box Assembly (WP 0140).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE LOCK (L) BRACKET REPLACEMENT

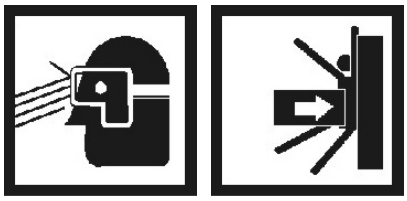
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Materials/Parts
Locknut, Hexagon Qty: 2 (WP 0162, Figure 8, Item 39)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

There are two stowage lock (L) brackets, each is removed and installed the same way.

This work package covers:

Removal and Installation of Stowage Lock (L) Bracket.

REMOVAL

1. Open stowage box lid (Figure 1, Item 1).
2. Remove two locknuts (Figure 1, Item 2) (discard locknuts), carriage bolts (Figure 1, Item 3), and stowage lock (L) bracket (Figure 1, Item 4) from stowage box lid (Figure 1, Item 1).

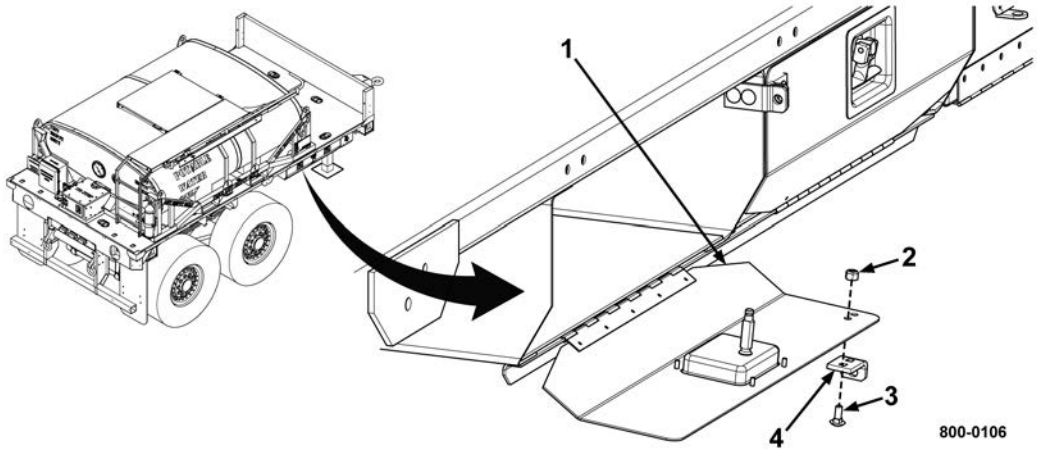


Figure 1. Stowage Lock (L) Bracket Replacement.

END OF TASK

INSTALLATION

1. Place stowage lock (L) bracket (Figure 1, Item 4) onto stowage lid (Figure 1, Item 1).
2. Install two carriage bolts (Figure 1, Item 3) and new locknuts (Figure 1, Item 2), that connect stowage lock (L) bracket (Figure 1, Item 4) to stowage box lid (Figure 1, Item 1).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE LOCK BRACKET REPLACEMENT

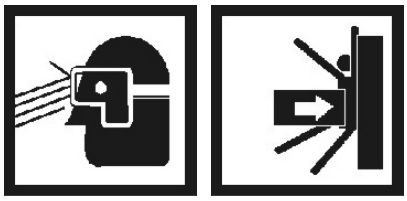
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Materials/Parts
Locknut, Hexagon Qty: 2 (WP 0162, Figure 8, Item 36)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Stowage Lock Bracket.

REMOVAL

1. Open stowage box lid (Figure 1, Item 1).
2. Remove two locknuts (Figure 1, Item 2) (discard locknuts) and carriage bolts (Figure 1, Item 3), that connect stowage lock bracket (Figure 1, Item 4) to stowage box (Figure 1, Item 5).

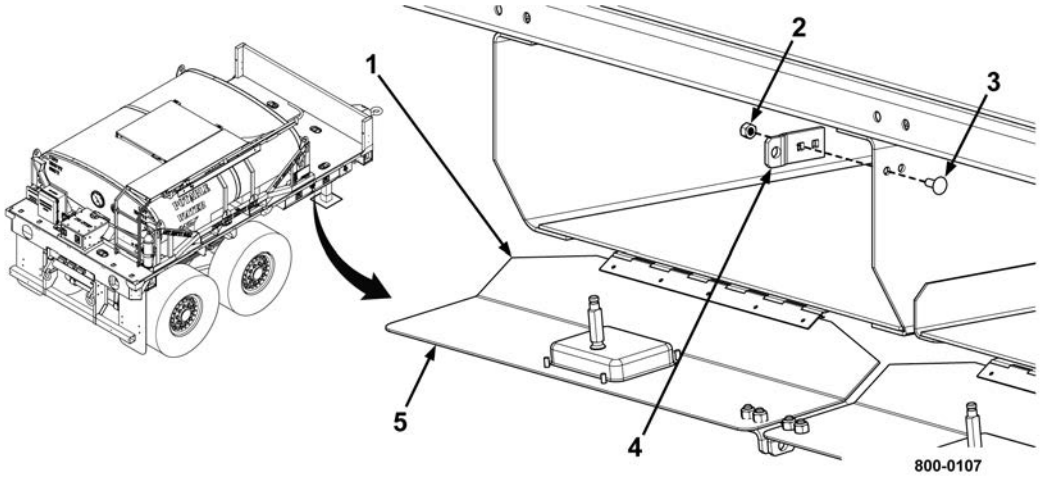


Figure 1. Stowage Lock Bracket Replacement.

END OF TASK

INSTALLATION

Install two carriage bolts (Figure 1, Item 3) and new locknuts (Figure 1, Item 2), that connect stowage lock bracket (Figure 1, Item 4) to stowage box (Figure 1, Item 5).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE BOX BOTTOM PANEL REPLACEMENT

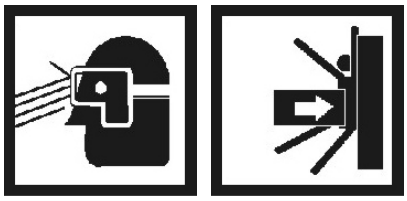
INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
- Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
- Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
- Stainless Rivet, 3/16 in. DIA, 1/4 in. GRIP (WP 0162, Figure 8, Item 40)

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

- Use appropriate size drill bit when drilling out rivets.
- Ensure stowage box is empty before removing rivets.
- Failure to comply may result in damage to equipment.

NOTE

There are two stowage box bottom panels. Each is removed and installed the same way.

This work package covers:

Removal and Installation of Stowage Box Bottom Panel.

REMOVAL

1. Remove rivets (Figure 1, Item 1) that secure stowage box bottom panel (Figure 1, Item 2) to stowage box (Figure 1, Item 3).
2. Slide stowage box bottom panel (Figure 1, Item 2) from stowage box (Figure 1, Item 3).

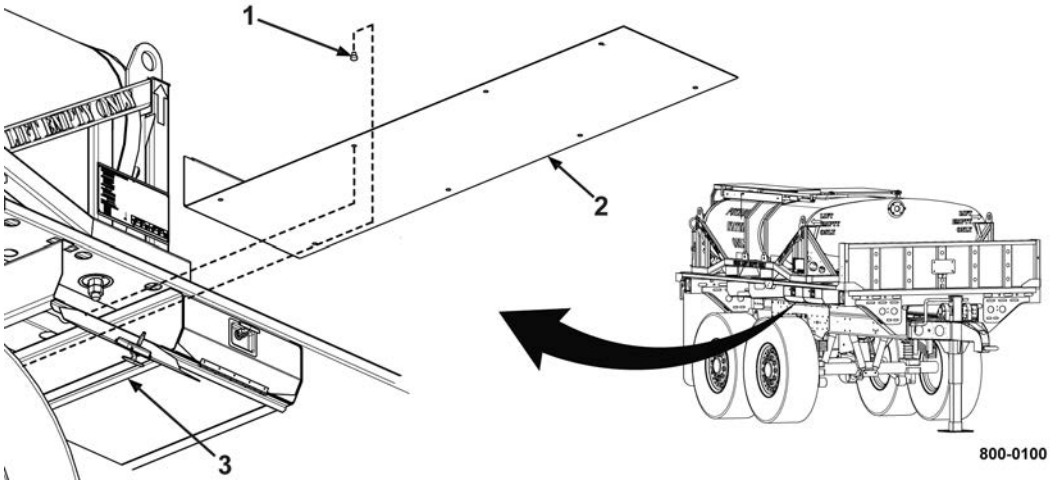


Figure 1. Stowage Box Bottom Panel Removal.

END OF TASK

INSTALLATION

1. Slide stowage box bottom panel (Figure 2, Item 2) into stowage box (Figure 2, Item 3) with curved end (Figure 2, Item 4) towards roadside of trailer.
2. Align curbside edge (Figure 2, Item 5) of stowage box bottom panel (Figure 2, Item 2) with curbside edge of stowage box (Figure 2, Item 3).
3. Install rivets (Figure 2, Item 1) that secure stowage box bottom panel (Figure 2, Item 2) to stowage box (Figure 2, Item 3).

INSTALLATION - Continued

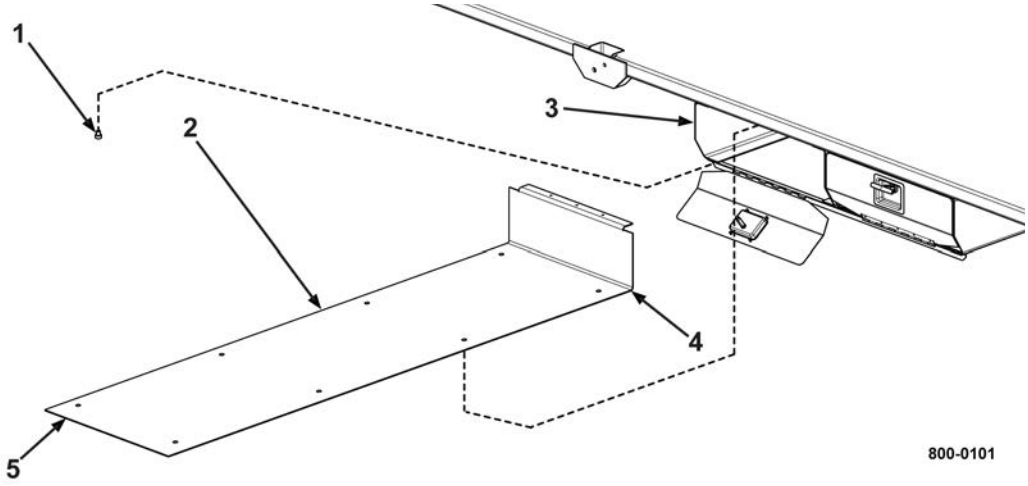


Figure 2. Stowage Box Bottom Panel Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WATER TANK ASSEMBLY REPAIR

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Bar Extension, ¾ in. Drive, 6.5 in.-7.5 in. Length (WP 0191, Table 1, Item 1)
- Handle, Sliding-T, ¾ in. Drive (WP 0191, Table 1, Item 8)
- Wrench, Torque, Click, Ratcheting,¾ in. Drive, 600 lb-ft (WP 0191, Table 1, Item 20)
- Lifting Device (2,500-lb capacity)
- Socket, Socket Wrench, 3-½ in. Long, 1-½ in.x¾ in. Drive (WP 0189, Table 1)

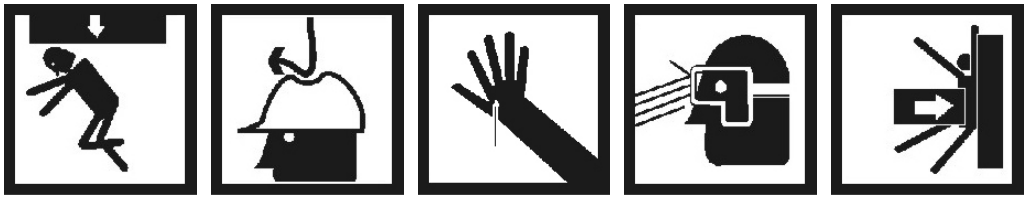
Personnel Required
- Two

References
- WP 0082
- WP 0083
- WP 0084

References (cont.)
- WP 0087
- WP 0088
- WP 0089
- WP 0090
- WP 0093
- WP 0105
- WP 0106
- WP 0110
- WP 0134
- WP 0137
- WP 0138
- WP 0139
- WP 0140
- WP 0151
- WP 0163, Figure 9

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Water Tank Drained (WP 0005)

WARNING



- Lift tank empty only. Water tank assembly weighs 2250 lb. Do not attempt to lift the water tank assembly without the aid of a suitable lifting device.
- Water tank assembly weighs 2250 lb. Do not attempt to lift the water tank assembly without the aid of a suitable lifting device.
- Ensure all personnel are clear of lifting device when raising or lowering water tank assembly. Always use protective gloves and a hard hat when working with lifting straps and cables.
- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Lift tank empty only. Water tank assembly weighs 2250 lb. Do not attempt to lift the water tank assembly without the aid of a suitable lifting device. Failure to comply may result in damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Water Tank Assembly.

REMOVAL

1. Locate wiring assemblies (Figure 1, Item 1) under rear of trailer, coming down from electrical control box (Figure 1, Item 2).
2. Disconnect two connector plugs (Figure 1, Item 3).

NOTE

If setting unit on ground, complete step 3.

3. Unscrew trailer cable conduit nut (Figure 1, Item 4).

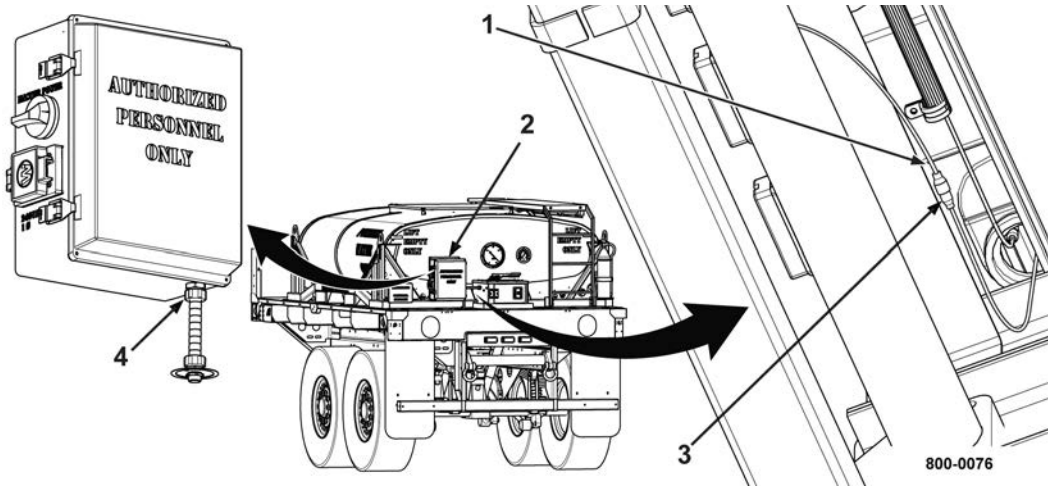


Figure 1. Connector Plug Disconnection and Connection.

4. Remove 70 in. stowage bag from rear stowage box (Figure 2, Item 1).
5. Remove bolt protective cap (Figure 2, Item 2).

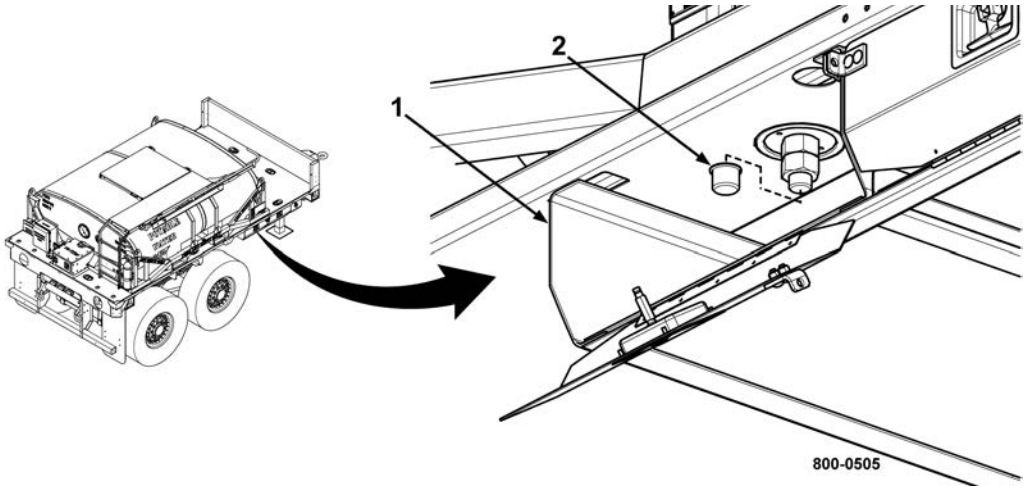


Figure 2. Bolt End Cap Removal.

REMOVAL - Continued

6. Remove bottom nut (Figure 3, Item 1) of four water tank mounting pins (Figure 3, Item 2).
7. Loosen top nut (Figure 3, Item 3) of four water tank mounting pins (Figure 3, Item 2).
8. Remove four locking pins (Figure 3, Item 4) from water tank mounting pins (Figure 3, Item 2).

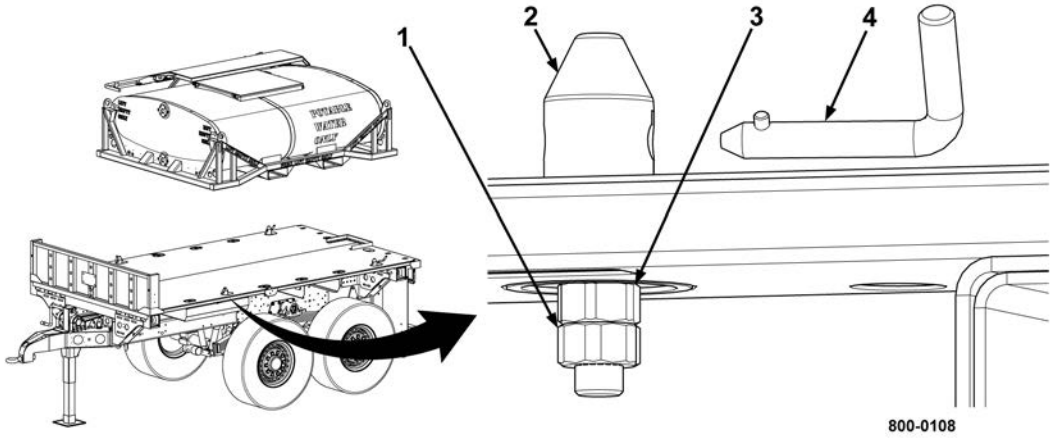


Figure 3. Retaining Pin Removal.

NOTE

Water tank assembly can be removed from trailer by fork lift or single point lift.

9. Ensuring lift area is clear of personnel; with an approved and suitable lifting device begin lifting water tank assembly (Figure 4, Item 1) slowly off of trailer (Figure 4, Item 2). Keep a visual observation and ensure heat trace ½ in. trailer cables conduit/wire (Figure 4, Item 3) is clear and free from obstruction as water tank assembly is separated. Secure heat trace ½ in. trailer cables conduit/wire.

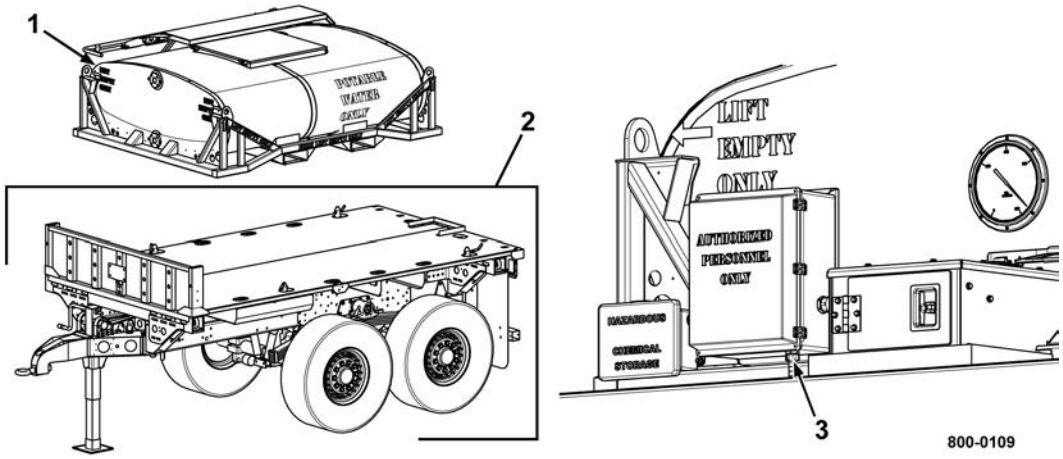


Figure 4. Water Tank Assembly Removal.

END OF TASK

DISASSEMBLY

1. Remove water level indicator gauge assembly (WP 0083).
2. Remove water level indicator gauge mechanism (WP 0082).
3. Remove front flange cover (WP 0084).
4. Remove spill box lid (WP 0087).
5. Remove relief valve assembly (WP 0088).
6. Remove manhole cover (WP 0090).
7. Remove manhole latching bolt (WP 0089).
8. Remove catwalk assembly (WP 0093).
9. Remove electrical control box assembly (WP 0106).
10. Remove electrical control box mount bracket (WP 0105).
11. Remove conduit, outlet heater (WP 0110).
12. Remove chemical storage box assembly (WP 0134).
13. Remove discharge box assembly (WP 0140).
14. Remove discharge hose extension assembly (WP 0139).
15. Remove main dispensing valve (WP 0137).
16. Remove heat trace (WP 0138).
17. Remove fire extinguisher mount bracket assembly (WP 0151).

END OF TASK

ASSEMBLY

1. Install fire extinguisher mount bracket assembly (WP 0151).
2. Install heat trace (WP 0138).
3. Install main dispensing valve (WP 0137).
4. Install discharge hose extension assembly (WP 0139).
5. Install discharge box assembly (WP 0140).
6. Install chemical storage box assembly (WP 0134).
7. Install conduit, outlet heater (WP 0110).
8. Install electrical control box mount bracket (WP 0105).
9. Install electrical control box assembly (WP 0106).
10. Install catwalk assembly (WP 0093).
11. Install manhole latching bolt (WP 0089).
12. Install manhole cover (WP 0090).
13. Install relief valve assembly (WP 0088).
14. Install spill box lid (WP 0087).
15. Install front flange cover (WP 0084).
16. Install water level indicator gauge mechanism (WP 0082).
17. Install water level indicator gauge assembly (WP 0083).

END OF TASK

INSTALLATION

NOTE

Water Tank Assembly can be installed by fork lift or single point lift.

1. Install box connector (Figure 5, Item 4). Ensure lift area is clear of personnel; with approved and suitable lifting device begin lowering water tank assembly (Figure 5, Item 2) slowly onto trailer (Figure 5, Item 3). Ensure ½ in. trailer cables conduit/wire (Figure 5, Item 5) is clear and free from obstruction as water tank assembly is lowered.
2. Align four mounting holes on water tank assembly (Figure 5, Item 2) with four water tank mounting pins (Figure 5, Item 1) and lower water tank assembly onto trailer deck (Figure 5, Item 6).

INSTALLATION - Continued

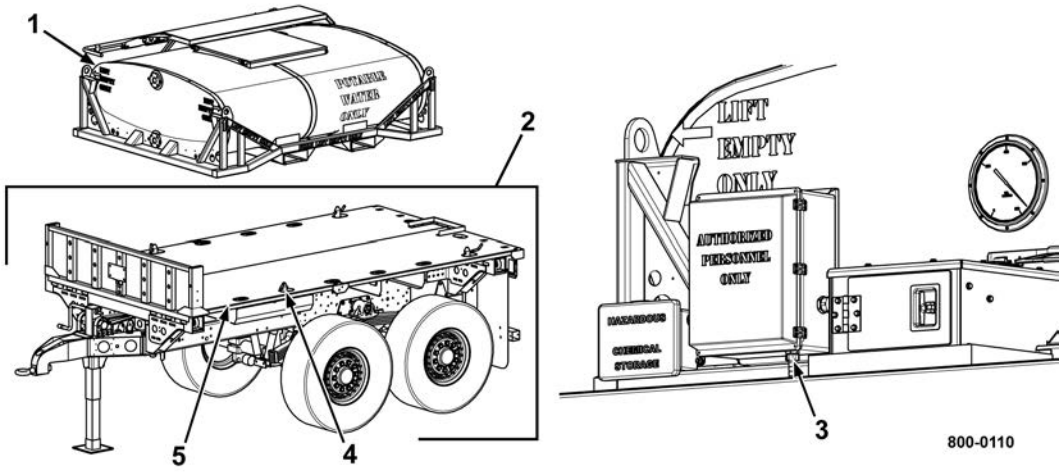


Figure 5. Water Tank Assembly Installation.

3. Insert four locking pins (Figure 6, Item 4) into water tank mounting pins (Figure 6, Item 2) and rotate locking pins until horizontal.
4. Tighten top nut (Figure 6, Item 3) of four water tank mounting pins (Figure 6, Item 2), then torque top nut to 525 lb-ft (712 N•m).
5. Install four bottom nuts (Figure 6, Item 1) firmly against the top nut (Figure 6, Item 3) of four water tank mounting pins (Figure 6, Item 2), then torque bottom nut to 300 lb-ft (407 N•m).

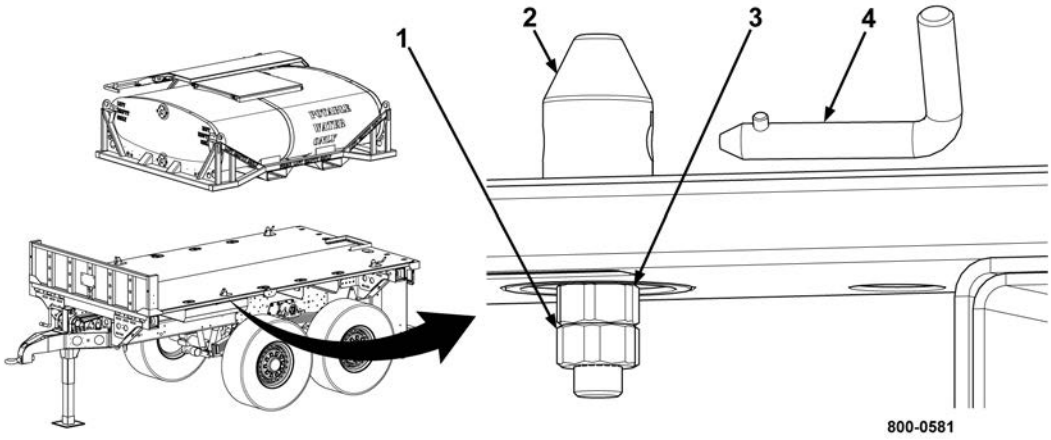


Figure 6. Mounting Pin.

INSTALLATION - Continued

6. Install bolt protective cap (Figure 7, Item 2).
7. Replace 70 in. stowage bag in rear stowage box (Figure 7, Item 1).

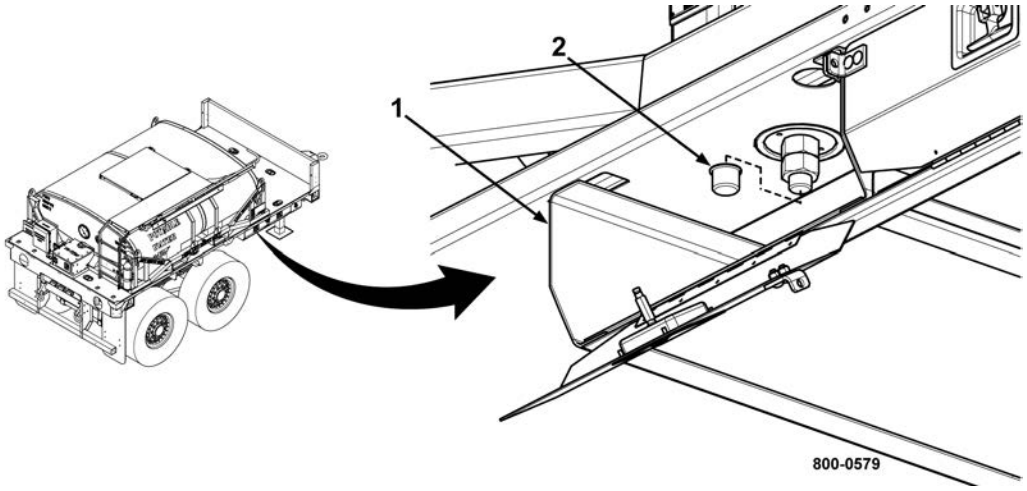


Figure 7. Rear Storage Box.

8. Reconnect two connector plugs (Figure 8, Item 1).

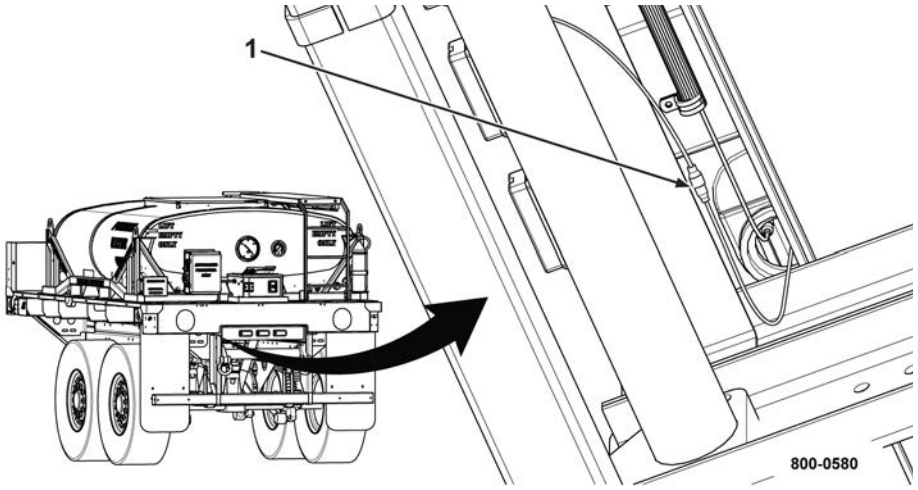


Figure 8. Connector Plug.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TANK INTERIOR INSPECTION

INITIAL SETUP:

Materials/Parts
Cleaning Kit, Supplies and Equipment (WP 0190, Table 1, Item 5)

References
WP 0052

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING

A confined space entry permit is required before entering the water tank. No one is to enter the tank without a permit, the required training, and necessary personal protective equipment. Failure to comply may result in injury or death to personnel.

CAUTION

- Do not enter tank with any materials, tools, or clothing that contains metal parts.
- Proper protective footwear required to enter tank.
- Failure to comply may result in damage to equipment.

This work package covers:

Inspection of Tank Interior.

Inspect

Tank Interior

WARNING

- To avoid muscle strain or back injury, stand and lift manhole cover when closing.
- Failure to comply may result in personal injury.

1. Open manhole cover (Figure 1, Item 1).
2. Inspect bottom surface of manhole cover (Figure 1, Item 1) for stains and discolorations.
3. Inspect ring of manhole opening (Figure 1, Item 2) for stains and discolorations.
4. Inspect manhole cover seal (Figure 1, Item 3) for stains, discolorations, cuts, or tears.

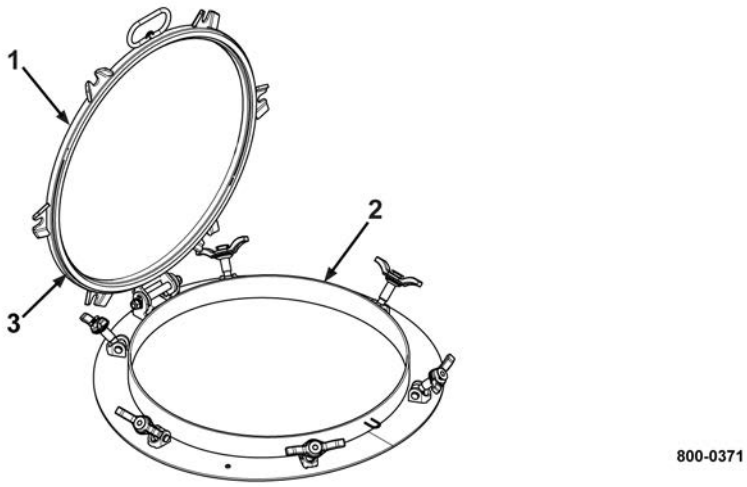


Figure 1. Manhole Assembly Inspection.

5. Inspect tank (Figure 2, Item 1) and baffle (Figure 2, Item 2) for stains, discolorations, dirt, debris, or pits in tank surface.

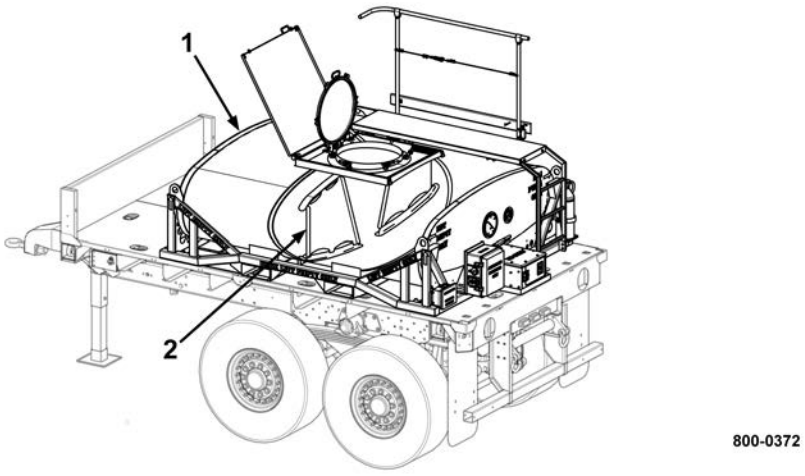


Figure 2. Inside of Tank Inspection.

6. Inspect bottom of three relief valves (Figure 3, Item 1) for discolorations.

NOTE

Relief valves are faulty if relief valves stick or are extremely difficult to depress.

7. Depress bottom of three relief valves (Figure 3, Item 1) to determine functionality.
8. Close manhole cover (Figure 3, Item 2)..

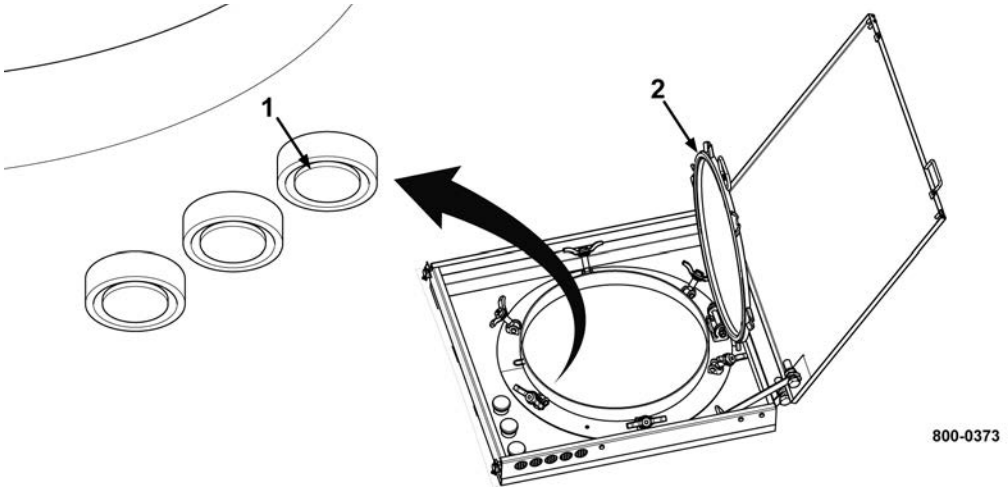


Figure 3. Relief Valve Inspection.

9. Inspect water level indicator assembly (Figure 4, Item 1) for discolorations.

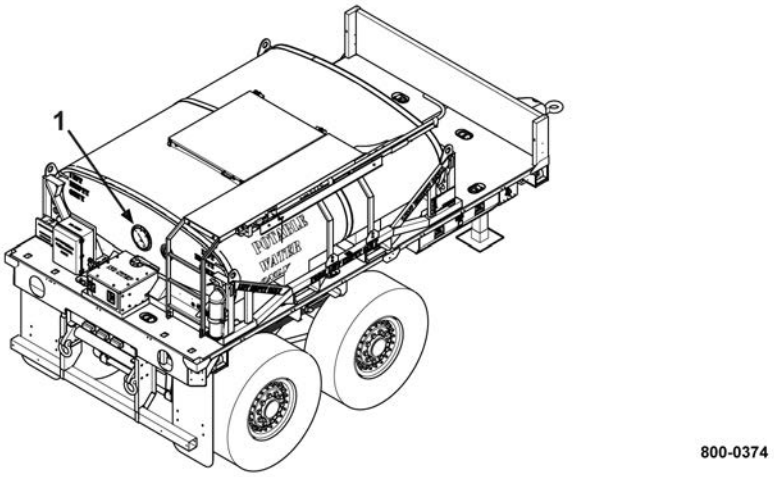


Figure 4. Water Level Indicator Inspection.

NOTE

Results of inspections must be annotated and addressed within 30 days. Appearance of stain spots does not represent any danger to personnel.

10. Record results of inspection in service packet.

11. If crevice corrosion, stains, discolorations, dirt, or debris is found, perform water tank cleaning procedure (WP 0052).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TANK INTERIOR REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Drill, Pneumatic, Right Angle 3/8 in. (WP 0191, Table 1, Item 4)
Glove, Rubber (WP 0191, Table 1, Item 6)
Goggle, Industrial (WP 0191, Table 1, Item 7)

Materials/Parts
Rag, Wiping (WP 0190, Table 1, Item 11)
Hardware Kit, Corrosion Repair (WP 0181, Figure 27, Item 1)

References
WP 0005
WP 0052

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING

- Safety goggles must be worn when grinding. Failure to comply may result In serious Injury or death to personnel.
- Wear Army approved hearing protection devices (HPDs) when working with pneumatic tools Inside tank.
- A confined space entry permit is required before entering the water tank.
- Do not enter the tank without a permit, the required training and necessary personal protective equipment.
- Failure to comply may result in injury or death to personnel.

CAUTION

- Do not enter tank with any materials or clothing that contains metal parts.
- Proper protective footwear required to enter tank.
- Failure to comply may result in damage to equipment.

This work package covers:

Tank Interior Repair.

REPAIR

1. Using fine felt tip pen (Figure 1, Item 1), outline damaged area (Figure 1, Item 2) on tank surface (Figure 1, Item 3). Outline (Figure 1, Item 4) should be 1 to 2 in. (25.4 to 50.8 mm) perimeter around damaged area.

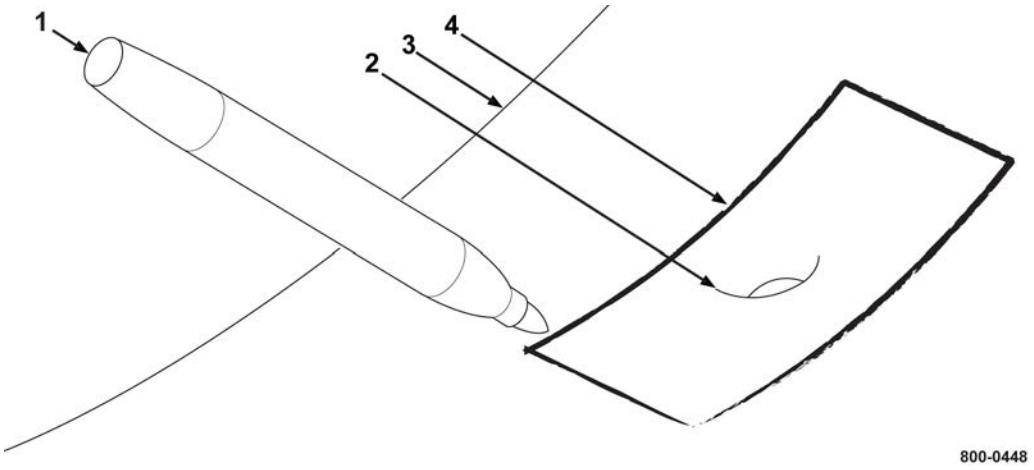


Figure 1. Outline Area.

2. Using grinding wheel (Figure 2, Item 1), grind outlined area (Figure 2, Item 2) in a crosshatch pattern (Figure 2, Item 3). Carefully control ground edges until marked outline is removed.

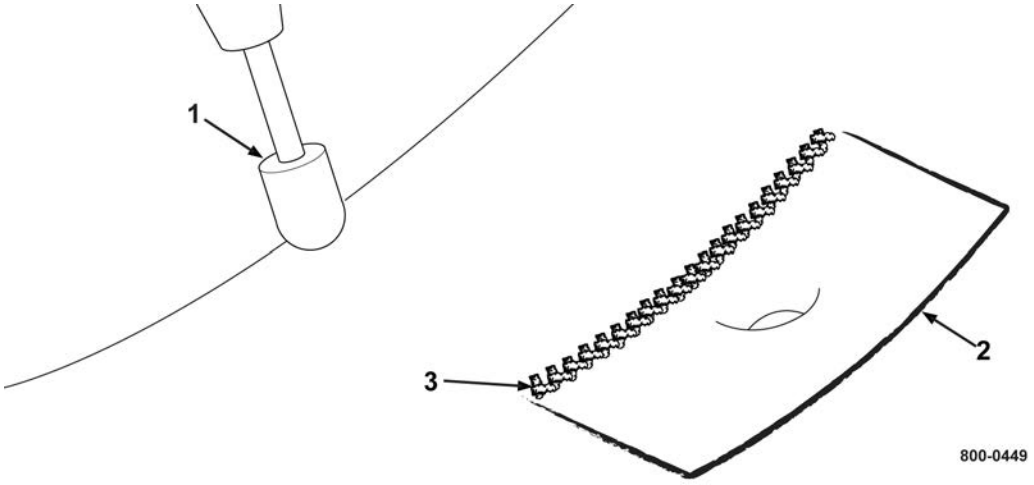


Figure 2. Grind Crosshatch Pattern.

REPAIR - Continued

CAUTION

Use caution when performing the following operation. If damage goes completely through the tank. DO NOT allow tapered burr tool to go deeper Into tank than necessary. Failure to comply may result In damage to electric heating element on bottom side of tank.

3. Using tapered burr tool (Figure 3, Item 1), grind damaged area (Figure 3, Item 2).

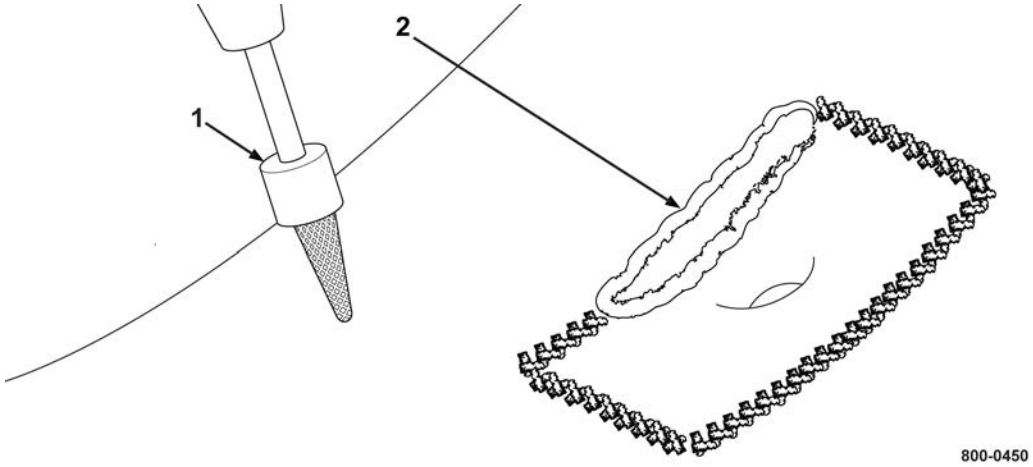


Figure 3. Grinding Damaged Area.

4. Using de-ionized water, clean wet rag and gently remove grinding residue.

WARNING

Cleaning/Degreasing compound is Irritating to respiratory system. A NOISH approved respirator MUST be worn during use. Failure to comply may result in serious injury or death to personnel.

5. Using cleaner/degreaser and a clean rag, clean area to be repaired at least 3 in. (76.2 mm) in perimeter from damaged area.

6. Using de-ionized water, rinse damaged area.

REPAIR - Continued

WARNING

Compressed air used for cleaning and drying purposes must not exceed 30 psi (207 kPa). Use only with effective chip guarding and proper protective equipment (goggles, gloves, etc.). Failure to comply may result in injury or death to personnel.

7. Using can of dry, compressed air (Figure 4, Item 1), completely dry surface (Figure 4, Item 2) being repaired.

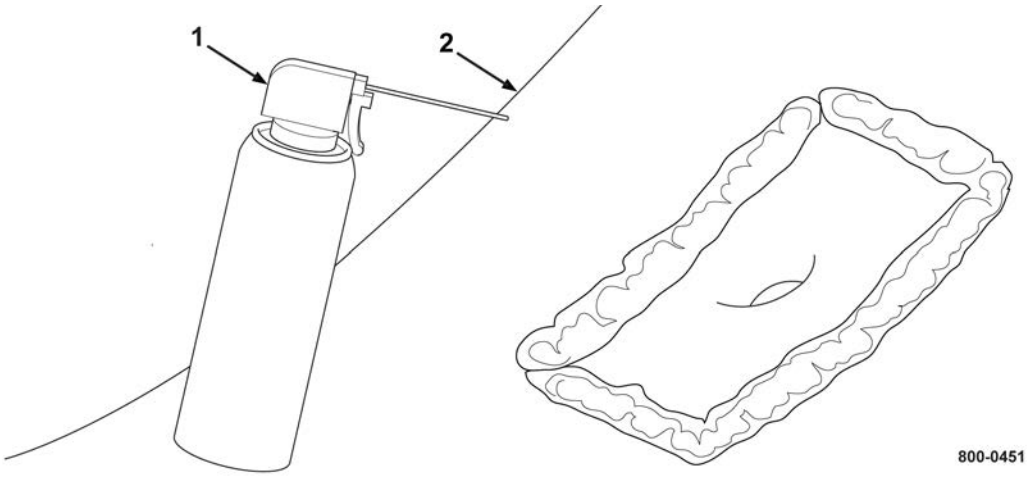


Figure 4. Drying Surface.

8. Using duct tape (Figure 5, Item 1), mask perimeter of damaged area (Figure 5, Item 2) to be repaired.

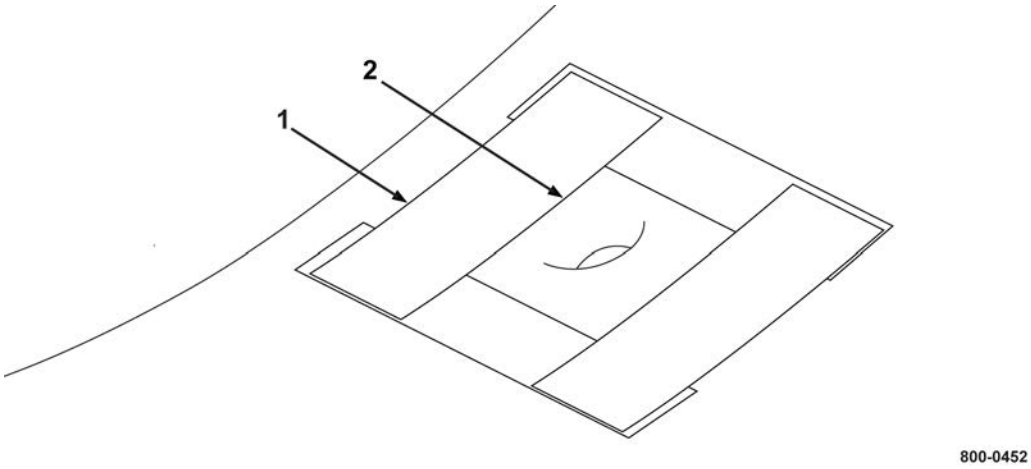


Figure 5. Mask Perimeter of Damaged Area.

REPAIR - Continued

NOTE

- Perform Steps 9 through 14 if hole larger than 11/16 in. (17.5 mm) is present.
- Proceed to Step 15 if hole is smaller than 11/16 in. (17.5 mm) or if there is no hole present.
- Coat must be applied thick enough that tank material does not show through.

9. Using reinforcement tape, cut a section of tape (Figure 6, Item 1) to fit within duct taped area (Figure 6, Item 2). Leave a 1/16-1/8 in. (2-3.3 mm) gap between reinforcement tape and duct tape.

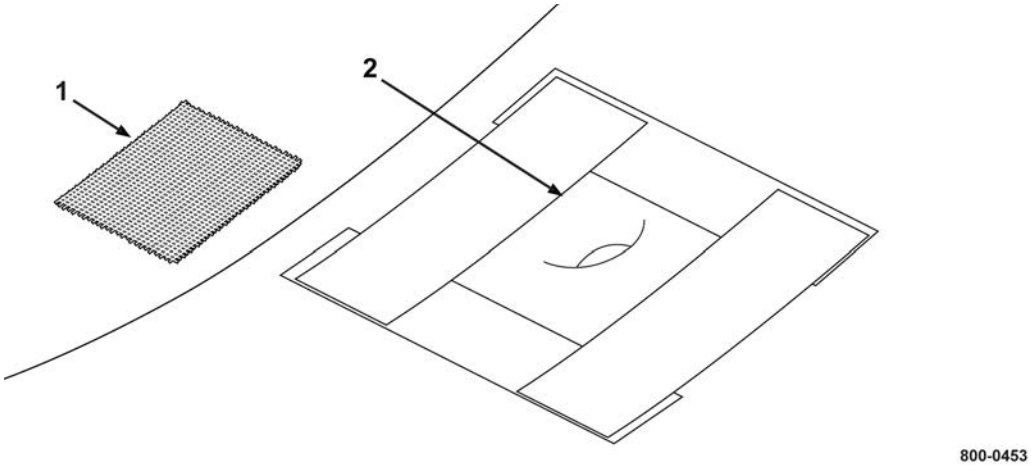


Figure 6. Reinforcement Tape.

CAUTION

If humidity exceeds 90% or environment Is damp/wet, DO NOT apply repair composite. Failure to comply may result In damage to equipment.

10. Using a mixing board (Figure 7, Item 1), mix E-metal steel composite base (Figure 7, Item 2) and solidifier (Figure 7, Item 3) in accordance with instructions supplied in hardware repair kit.

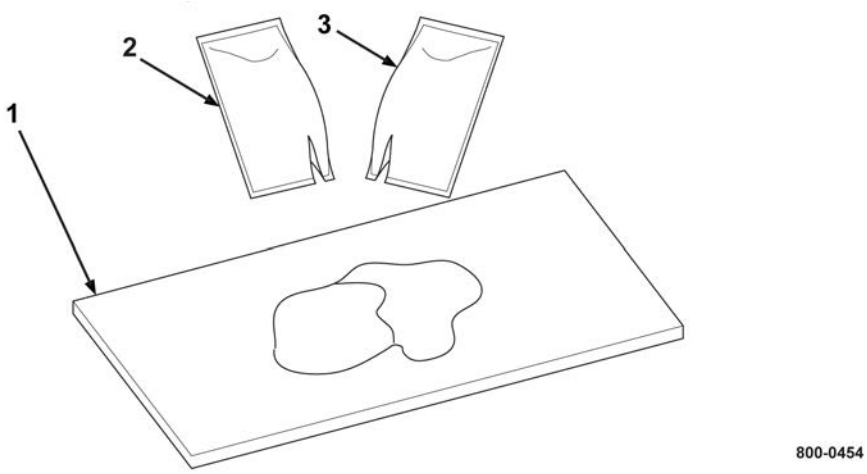


Figure 7. Mix Base and Solidifier.

REPAIR - Continued

11. Place reinforcement tape (Figure 8, Item 1) on a disposable surface and apply a light coat of repair composite using short bristled brush (Figure 8, Item 2). Ensure complete coverage of both sides of tape.

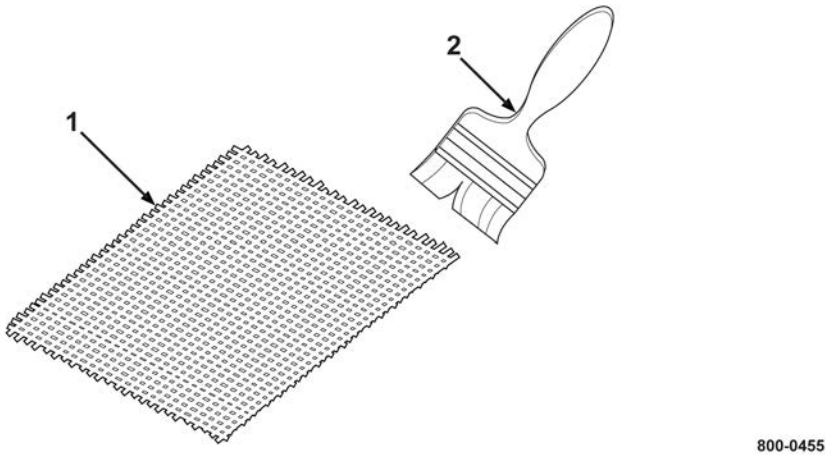


Figure 8. Applying Coat of Base and Solidifier.

12. Apply treated reinforcement tape to area being repaired.
13. Using large spatula, apply additional coating of repair composite over reinforcement tape and allow coating to span gap between reinforcement tape and duct tape.
14. Immediately remove duct tape from surface.

NOTE

If Steps 9 through 14 were performed, proceed to Step 18.

15. Using a mixing board (Figure 9, Item 1), mix E-metal steel composite base (Figure 9, Item 2) and solidifier (Figure 9, Item 3) in accordance with instructions supplied in hardware repair kit.

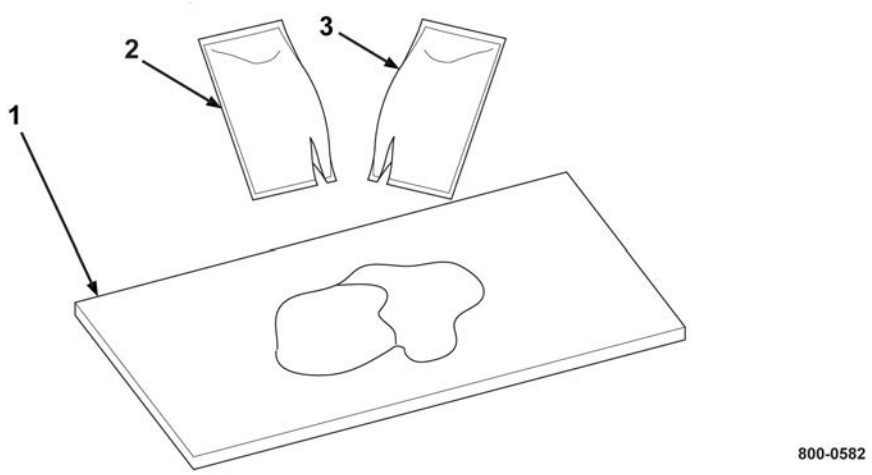


Figure 9. Base and Solidifier.

16. Immediately apply a light coat of repair composite to area being repaired, using small spatula making sure no evidence of tank material is showing.

REPAIR - Continued

17. Immediately remove duct tape from surface.

NOTE

- Allow base and solidifier to cure to a semi-firm state for at least 10 minutes.
- If removal of duct tape created a raised edge around repair composite, use sandpaper to remove raised edges after material has cured.
- Wipe away all sanding residue with a clean dry cloth.

18. Using sandpaper, lightly roughen surface of repair composite.

CAUTION

Ensure duct tape is outside of ALL prepared areas. Failure to comply may result In damage to equipment.

19. Using duct tape (Figure 10, Item 1), mask perimeter of damaged area (Figure 10, Item 2).

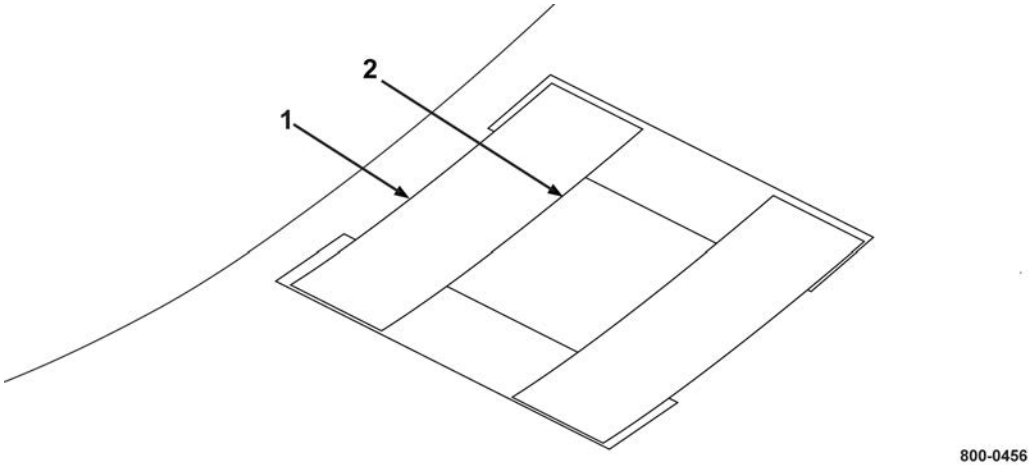


Figure 10. Masking Perimeter with Duct Tape.

REPAIR - Continued

20. Mix immersion grade protection base (Figure 11, Item 1) and solidifier (Figure 11, Item 2).

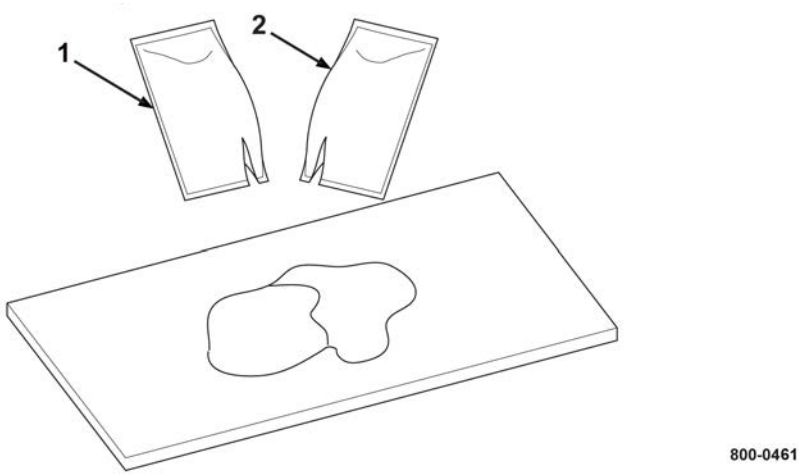


Figure 11. Mix Immersion Grade Protection Base and Solidifier.

NOTE

Thickness gauge Is used by Inserting the gauge Into the center of the corrosion protection and observing the end of the tabs for wetness. Tabs 6, 7, 8, 10, and 12 should be wet, tab 14 should be dry.

21. Using short bristled brush (Figure 12, Item 1) apply first coat of corrosion protection over repair composite coating. Apply material approximately 12 mm (0.012 in.) thick. Immediately determine by using thickness gauge (Figure 12, Item 2).

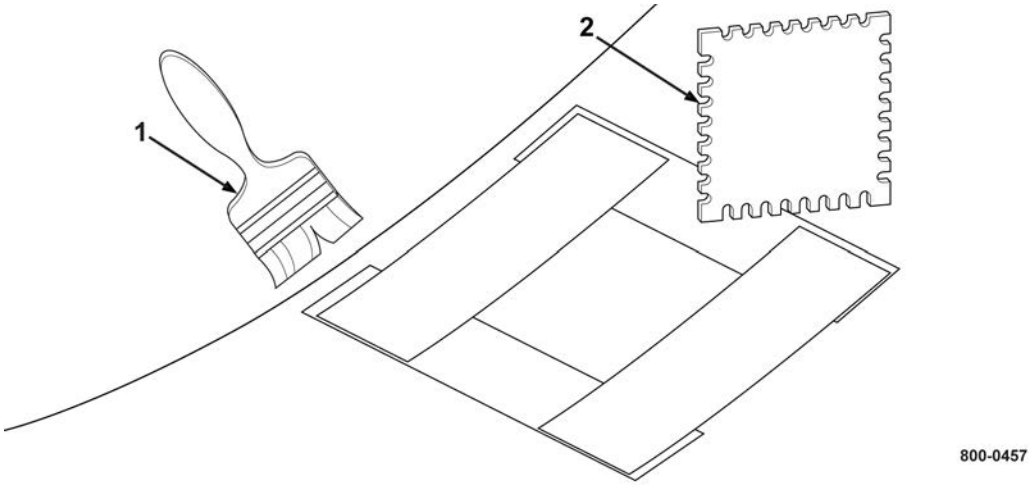


Figure 12. Apply Coat of Immersion Grade Protection.

REPAIR - Continued

22. Inspect coverage area for signs of pin holes or misses. If found, brush over surface to eliminate defect.
23. Immediately remove duct tape from surface.

NOTE

- Lower temperatures require additional cure time.
- Higher temperatures reduce cure time.

24. Allow first coat of immersion grade protection to cure for a minimum of 24 hr at 68°F (20°C).

CAUTION

Ensure duct tape Is outside of prepared areas. Failure to comply may result In damage to equipment.

25. Using duct tape (Figure 13, Item 1), mask perimeter of damaged area (Figure 13, Item 2) to be repaired.

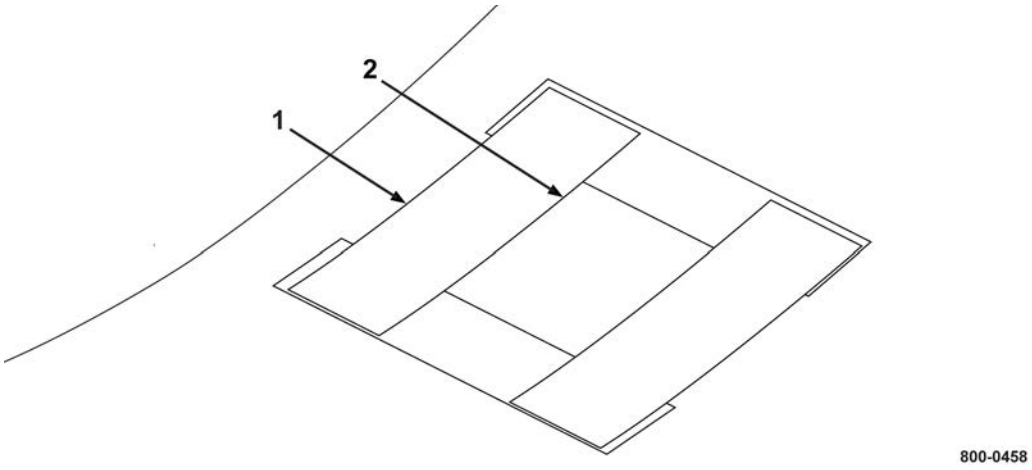


Figure 13. Use Duct Tape to Mask Perimeter.

REPAIR - Continued

26. Mix immersion grade protection base (Figure 14, Item 1) and solidifier (Figure 14, Item 2).

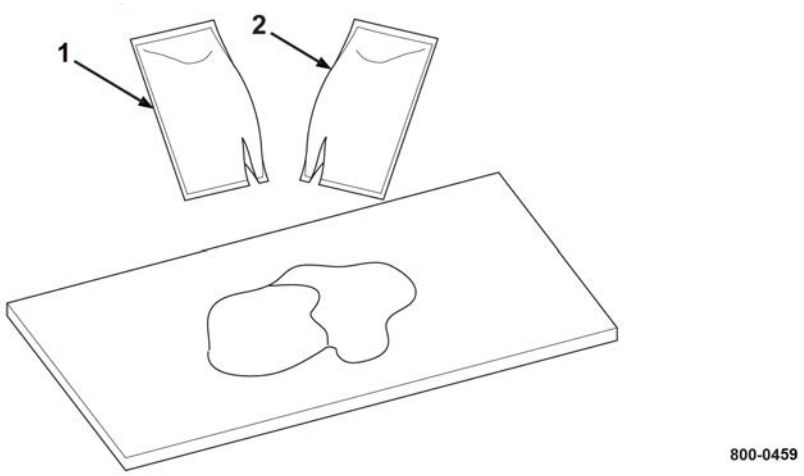


Figure 14. Mix Immersion Grade Protection Base and Solidifier Second Coat.

NOTE

Thickness gauge Is used by inserting the gauge Into the center of the immersion grade protection and observing the end of the tabs for wetness. Tabs 6, 7, 8, 10, and 12 should be wet tab 14 should be dry.

27. Using short bristled brush (Figure 15, Item 1), apply second coat of immersion grade protection. Apply material approximately 12 mm (0.012 in.) thick. Immediately determine thickness by using thickness gauge (Figure 15, Item 2).

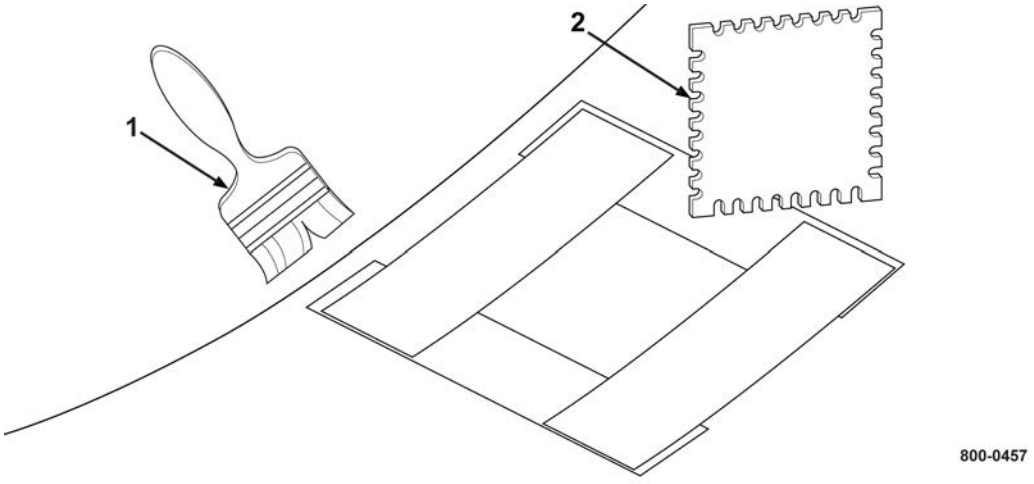


Figure 15. Apply Second Coat of Corrosion Protection.

28. Inspect coverage area for signs of pin holes or misses. If found, brush over surface to eliminate defect.

29. Immediately remove duct tape from surface.

30. Allow repair to cure for a minimum of 48 hr at 68°F (20°C) or 72 hr if above 32°F (0°C) but below 68°F (20°C).

REPAIR - Continued

31. Disinfect water tank (WP 0052).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).
3. Fill water tank (WP 0005).
4. Check tank for leaks.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CLADDING, OUTER SHELL REPAIR

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
- Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
- Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

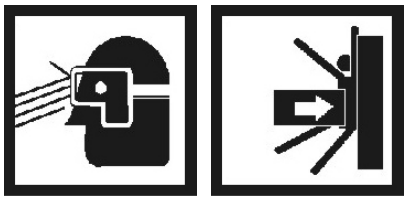
Materials/Parts
- Adhesive, 221B (WP 0190, Table 1, Item 2)

Materials/Parts (cont.)
- Cladding Patch, Green Repair Kit (WP 0180, Figure 26, Item 1)
- Cladding Patch, Tan Repair Kit (WP 0180, Figure 26, Item 5)

References
- WP 0052
- WP 0074

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Failure to comply could result in serious injury or death to personnel or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may result in damage to equipment.

NOTE

- Cladding patch covers a 12 in. x12 in. (304 mm x304 mm) area.
- Remove tank as needed to access damaged area (WP 0074).

This work package covers:

Repair of Cladding, Outer Shell Repair.

REPAIR

1. Clean and dry the affected area (WP 0052).
2. Place a heavy bead (Figure 1, Item 1) of adhesive around the entire patch (Figure 1, Item 2) approximately 2 in. from outside edge.
3. Place patch (Figure 1, Item 2) over damaged area (Figure 1, Item 3) and apply light pressure ensuring adhesive comes in contact with outer shell (Figure 1, Item 4).

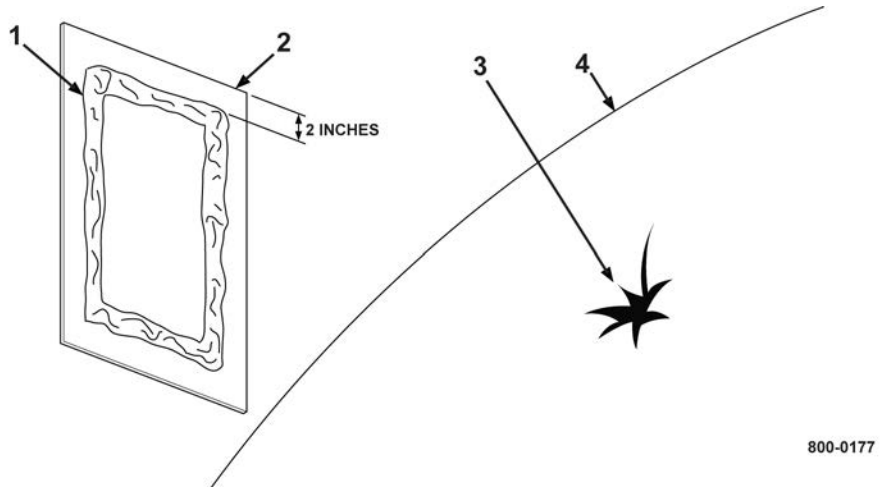


Figure 1. Outer Shell Patch Repair.

NOTE

Drill holes in accordance with rivet size being installed.

4. Drill rivet holes (Figure 2, Item 1) approximately every 2 in. along outside edge of patch (Figure 2, Item 2).
5. Install rivets (Figure 2, Item 3).

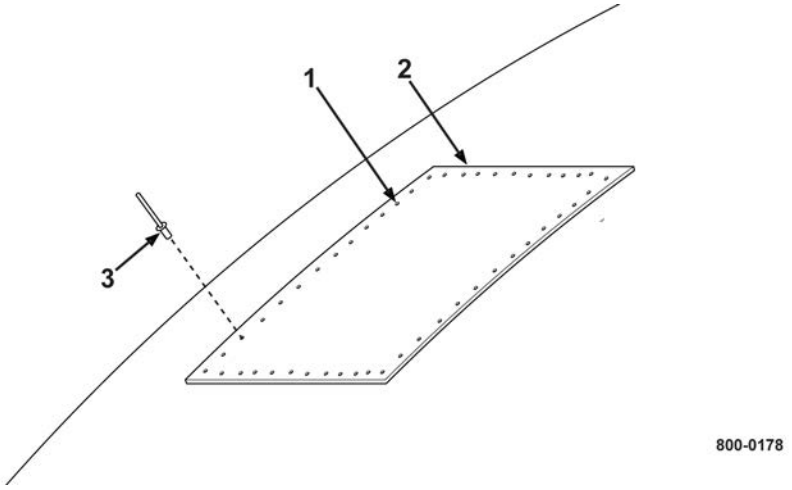


Figure 2. Outer Shell Patch Rivets.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Water Tank Assembly (WP 0074) if removed.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WATER TEMPERATURE INDICATOR AND SENSOR REPLACEMENT

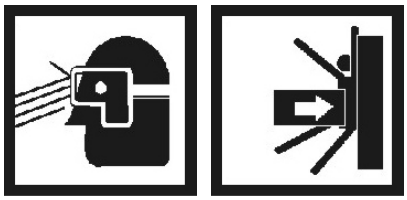
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
Adhesive, 221B (WP 0190, Table 1, Item 2)
Rivet, 3/16 in. DIA, .375 in. GRIP (WP 0164 Figure 10, Item 3)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Rear End Cap Removed (WP 0081)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may result in damage to equipment.

This work package covers:

Removal and Installation of Water Temperature Indicator and Sensor.

REMOVAL

Remove rivets (Figure 1, Item 1) and water temperature indicator (Figure 1, Item 2) from rear end cap (Figure 1, Item 3).

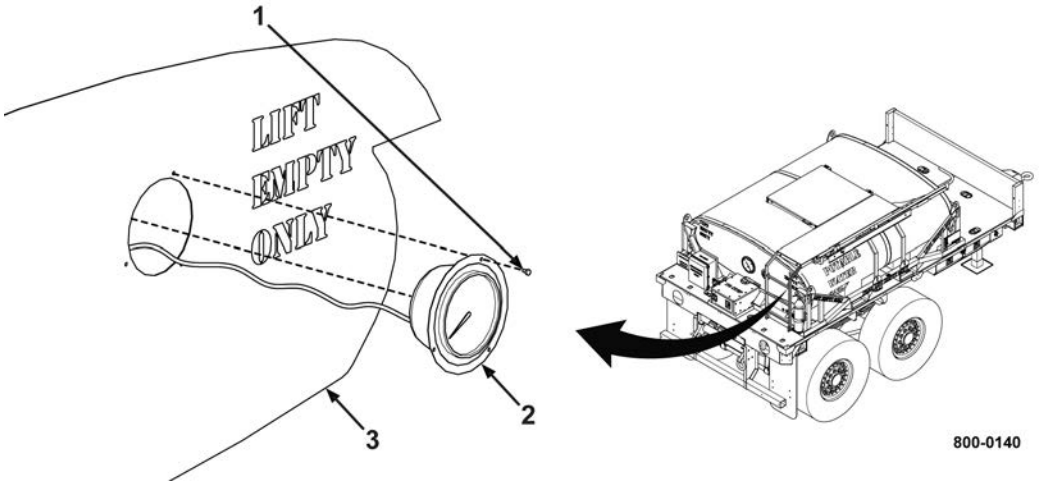


Figure 1. Water Temperature Indicator Replacement.

END OF TASK

INSTALLATION

NOTE

Remove old adhesive from around water temperature indicator and apply new adhesive before re-installing.

Install water temperature indicator (Figure 1, Item 2) and rivets (Figure 1, Item 1) to end cap (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Rear End Cap (WP 0081).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
OUTER SHELL CENTER STRAP ASSEMBLY REPLACEMENT

INITIAL SETUP:

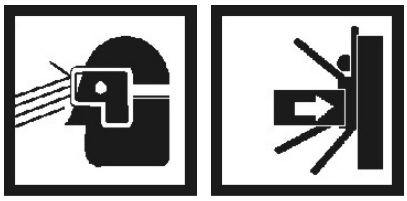
Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
- Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
- Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
- Rivet, 3/16 in. DIA, .375 in. GRIP (WP 0164, Figure 10, Item 9)

Personnel Required
- Two

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Water Tank Assembly Removed (WP 0074)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may cause damage to equipment.

NOTE

- Top portion of outer shell center strap is riveted on each side of the spill box.
- Tank must be elevated to perform task.

This work package covers:

Removal and Installation of Outer Shell Center Strap Assembly.

REMOVAL

1. Remove bolt (Figure 1, Item 1), two flat washers (Figure 1, Item 2), and nut (Figure 1, Item 3) from bottom portion of outer shell center straps (Figure 1, Item 4).

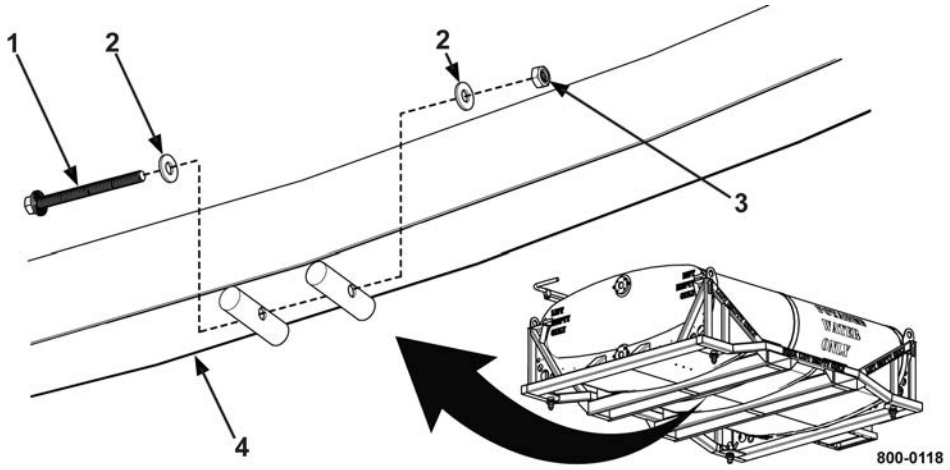


Figure 1. Bottom Outer Shell Center Strap Removal.

CAUTION

Do not drill through tank. Failure to comply may result in damage to equipment.

2. Lift spill box lid (Figure 2, Item 1) and remove rivets (Figure 2, Item 2) from top portion of each center strap (Figure 2, Item 3).

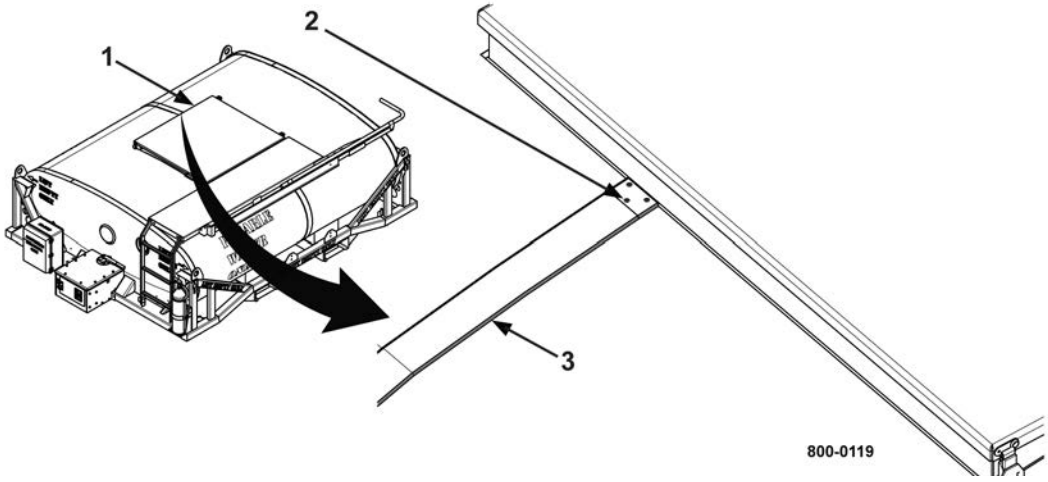


Figure 2. Top Outer Shell Center Strap Replacement.

3. Remove center strap (Figure 3, Item 1) and rubber cladding strip (Figure 3, Item 2) from water tank outer shell (Figure 3, Item 3).

REMOVAL - Continued

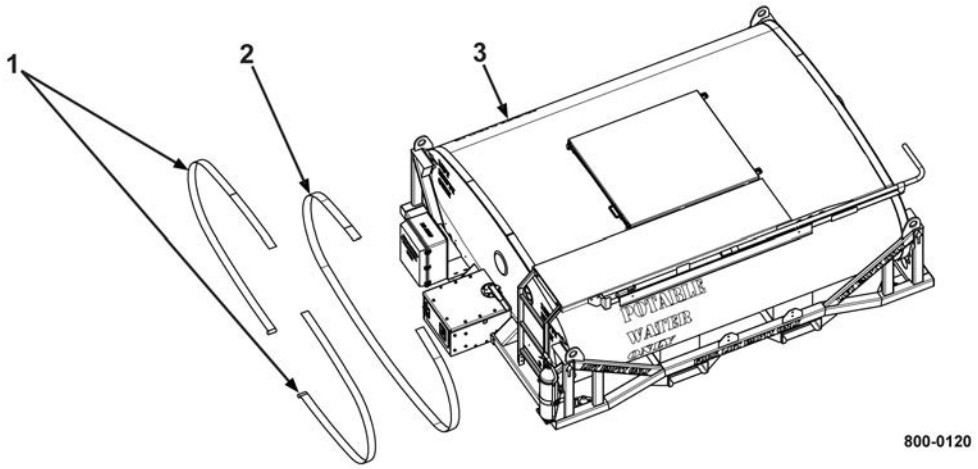


Figure 3. Rubber Cladding Strip Replacement.

END OF TASK

INSTALLATION

1. Place rubber cladding strip (Figure 3, Item 2) and outer shell center strap (Figure 3, Item 1) onto water tank outer shell (Figure 3, Item 3).
2. Install rivets (Figure 2, Item 2) into each center strap (Figure 2, Item 3) and close spill box lid (Figure 2, Item 1).
3. Install bolt (Figure 4, Item 1), two flat washers (Figure 4, Item 2), and nut (Figure 4, Item 3) on bottom portion of center straps (Figure 4, Item 4).
4. Align center strap (Figure 4, Item 4) over outer shell seam (Figure 4, Item 5). Tighten bolt firmly.

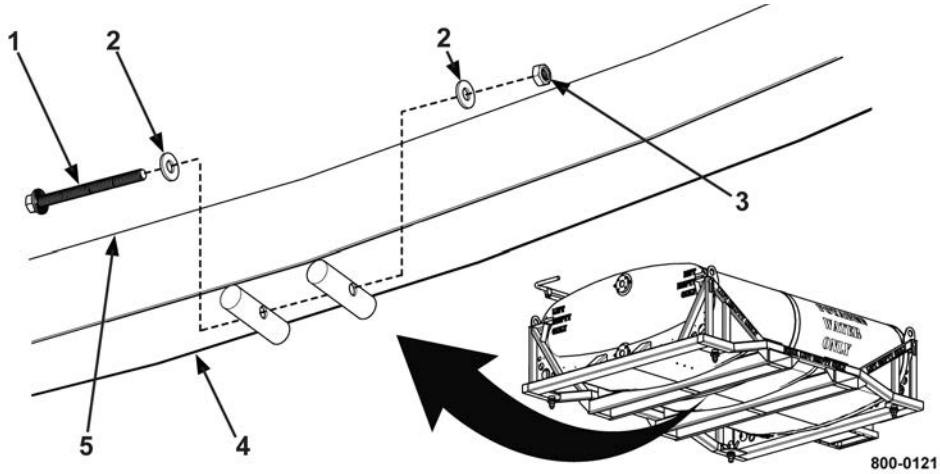


Figure 4. Outer Shell Center Strap Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Water Tank Assembly (WP 0074).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
OUTER SHELL END STRAP ASSEMBLY REPLACEMENT

INITIAL SETUP:

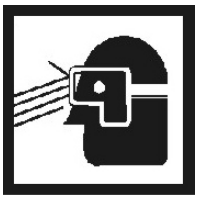
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Personnel Required
Two

References
WP 0164, Figure 10

Equipment Condition
Water Tank Assembly Removed (WP 0074)

WARNING



- Wear eye protection when working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

There are two outer shell end straps, each is removed and installed the same way.

This work package covers:

Removal and Installation of Outer Shell End Strap Assembly.

REMOVAL

1. Remove bolt (Figure 1, Item 1), two flat washers (Figure 1, Item 2), and nut (Figure 1, Item 3) from top portion of outer shell end strap (Figure 1, Item 4).

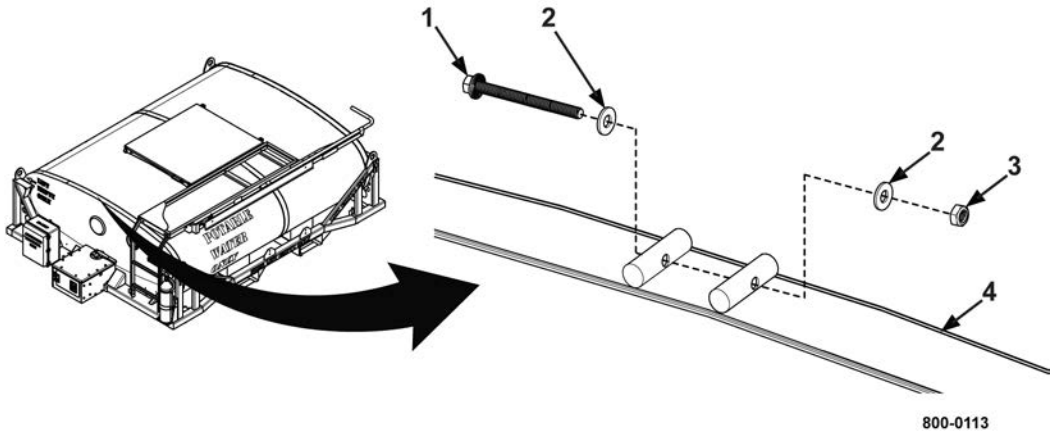


Figure 1. Top Outer Shell End Strap Replacement.

2. Remove bolt (Figure 2, Item 2), two flat washers (Figure 2, Item 3), and nut (Figure 2, Item 4) from bottom portion of outer shell end strap (Figure 2, Item 1).

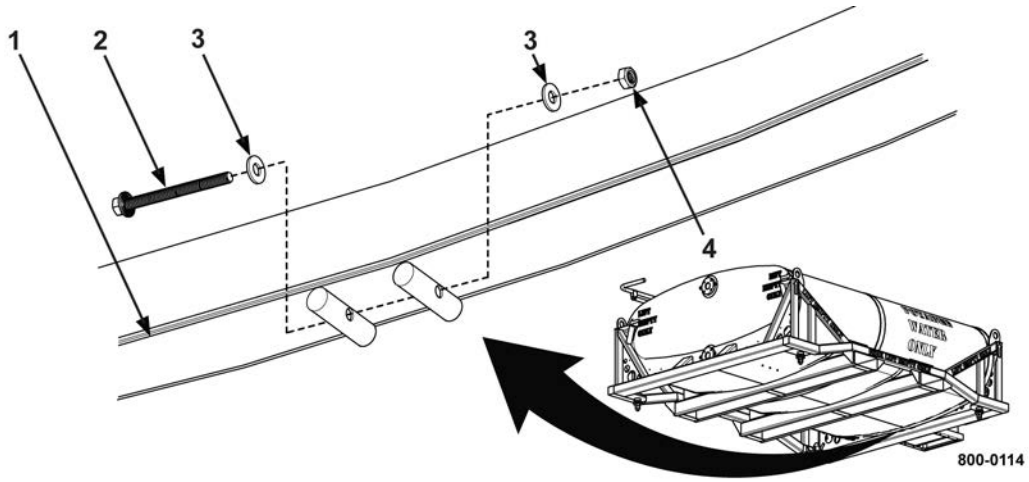


Figure 2. Bottom Outer Shell End Strap Replacement.

3. Remove the two halves of outer shell end strap (Figure 3, Item 1) and rubber cladding strip (Figure 3, Item 2).

REMOVAL - Continued

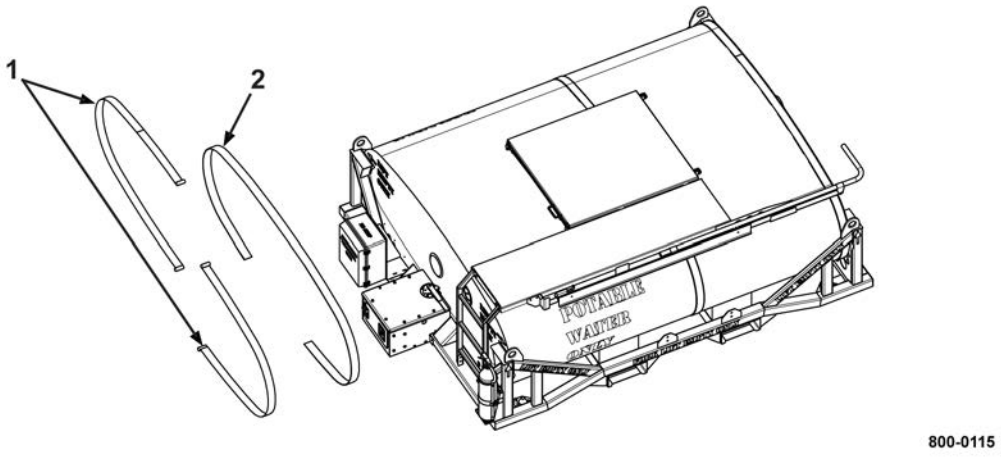


Figure 3. Rubber Cladding Strip Removal.

END OF TASK

INSTALLATION

1. Place rubber cladding strip (Figure 4, Item 2) and outer shell end strap (Figure 4, Item 1) onto end of water tank outer shell (Figure 4, Item 3).

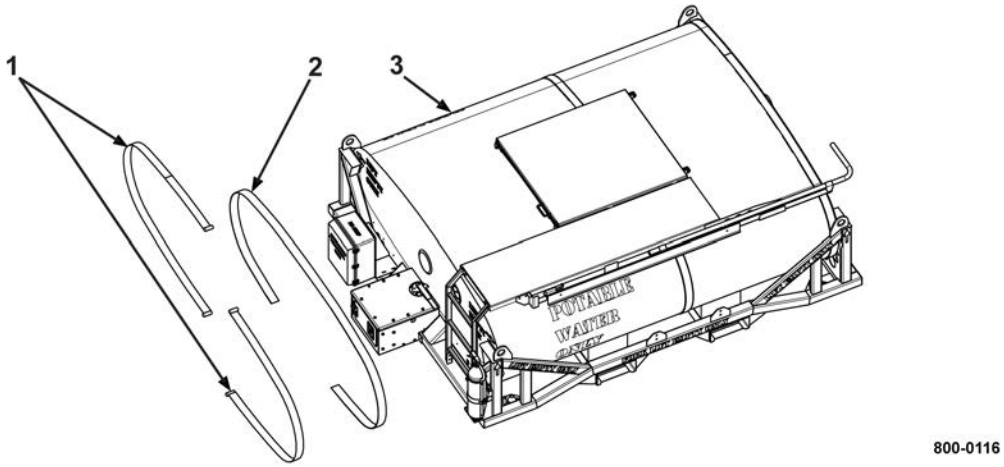


Figure 4. Rubber Gasket Installation.

INSTALLATION - Continued

2. Install bolt (Figure 1, Item 1), two flat washers (Figure 1, Item 2), and nut (Figure 1, Item 3) on top portion of outer shell end strap (Figure 1, Item 4).
3. Install bolt (Figure 5, Item 1), two flat washers (Figure 5, Item 2), and nut (Figure 5, Item 3) on bottom portion of outer shell end strap (Figure 5, Item 6).
4. Ensure outer shell end strap (Figure 5, Item 6) is seated properly into rubber cladding strip (Figure 5, Item 7) along outside edge (Figure 5, Item 5) of water tank outer shell (Figure 5, Item 4).
5. Tighten top bolt first, then bottom bolt.

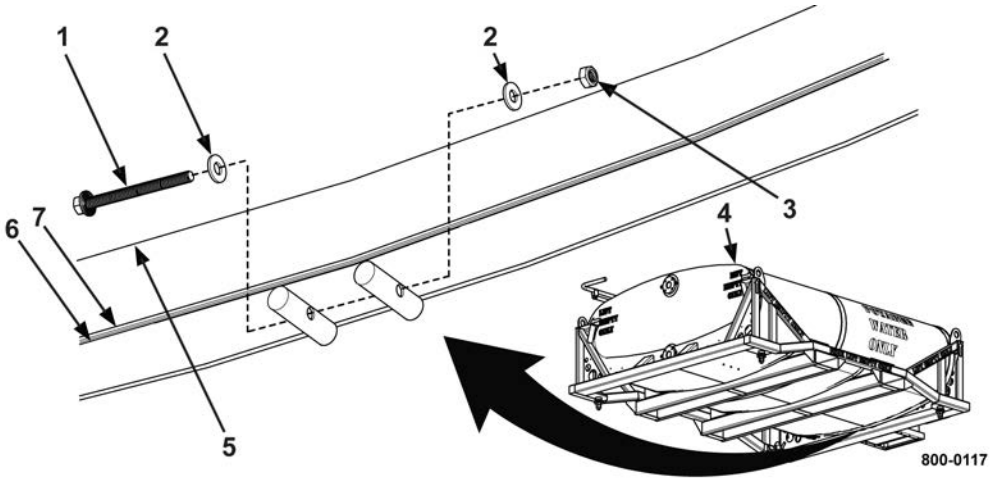


Figure 5. Bottom Outer Shell End Strap Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Water Tank Assembly (WP 0074).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR END CAP REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
- Drill, Pneumatic, Right Angle 3/8 in. (WP 0191, Table 1, Item 4)
- Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
- Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)
- Wrench, Torque, Click, Ratcheting, 3/8 in. Drive, 75 lb-ft (WP 0191, Table 1, Item 18)

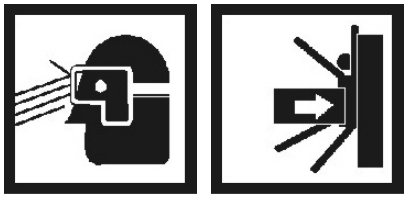
Materials/Parts
- Adhesive, 221B (WP 0190, Table 1, Item 2)
- Rivet, Blind, Alum/Stl, 3/16 in. DIA, .375 in. GRIP (WP 0164, Figure 10, Item 22)

Materials/Parts (cont.)
- Rivet, Blind, Alum/Stl, 1/8 in. DIA, .375 in. GRIP (WP 0164, Figure 10, Item 23)
- Lock Washer Qty: 4 (WP 0165, Figure 11, Item 4)

References
- WP 0078

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Water Tank Drained (WP 0005)
- Catwalk Ladder Removed (WP 0099)
- Discharge Box Assembly Removed (WP 0140)
- Water Level Indicator Gauge Assembly Removed (WP 0083)

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Failure to comply could result in serious injury or death to personnel or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may cause damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Rear End Cap.

REMOVAL

1. Remove nut (Figure 1, Item 1), lock washer (Figure 1, Item 5), and two screws (Figure 1, Item 2) from each of the four gauge attachment arms (Figure 1, Item 3) connected to the mounting flange (Figure 1, Item 4). Discard lock washers.
2. Remove four attachment arms (Figure 1, Item 3).

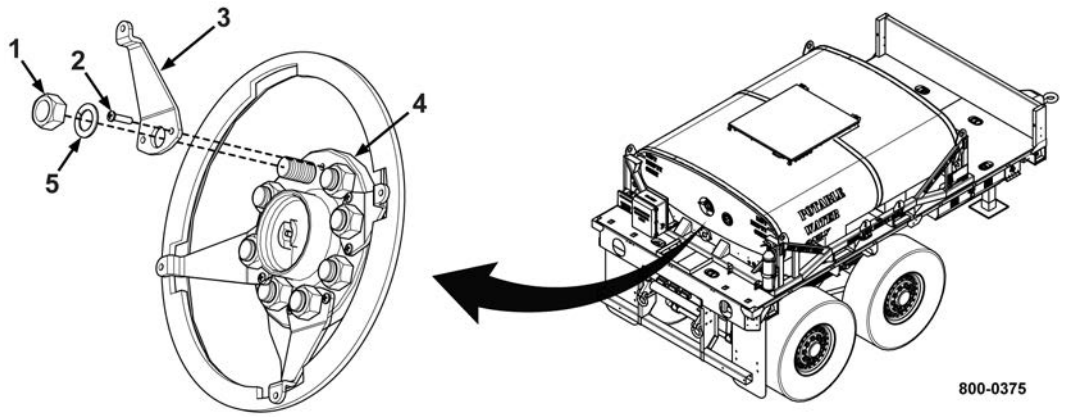


Figure 1. Gauge Attachment Arm Removal.

3. Cut adhesive along edge of rear end cap (Figure 2, Item 1).
4. Remove 1/8 in. diameter rivets along bottom of the rear end cap (Figure 2, Item 1).
5. Remove 3/16 in. diameter rivets along top of rear end cap (Figure 2, Item 1).

CAUTION

Water temperature indicator sensor must be removed from water tank as rear end cap is being removed. Failure to comply may cause damage to equipment.

6. Slowly pull rear end cap (Figure 2, Item 1) from water tank (Figure 2, Item 2) approximately 6 in.

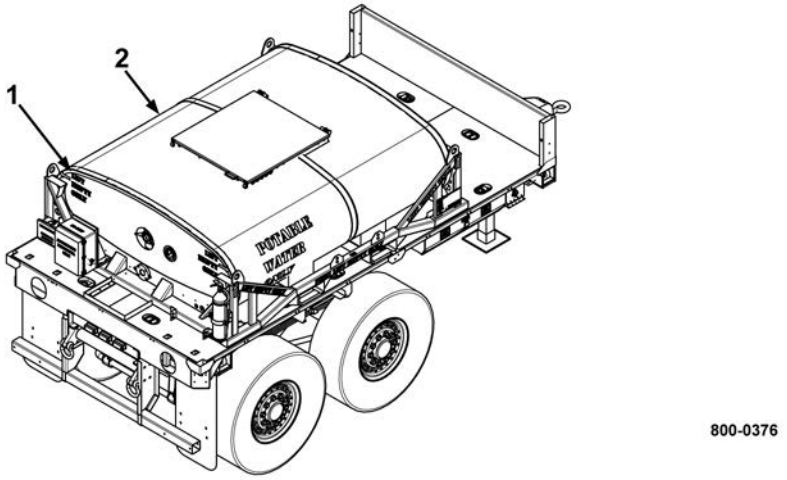


Figure 2. Rivet and Adhesive Removal.

REMOVAL - Continued

7. Remove rear end cap (Figure 3, Item 1) by loosening nut (Figure 3, Item 2) that holds water temperature indicator sensor (Figure 3, Item 3) to tank.
8. Slide water temperature indicator sensor (Figure 3, Item 3) from between foam washers (Figure 3, Item 4) and remove rear end cap (Figure 3, Item 1).

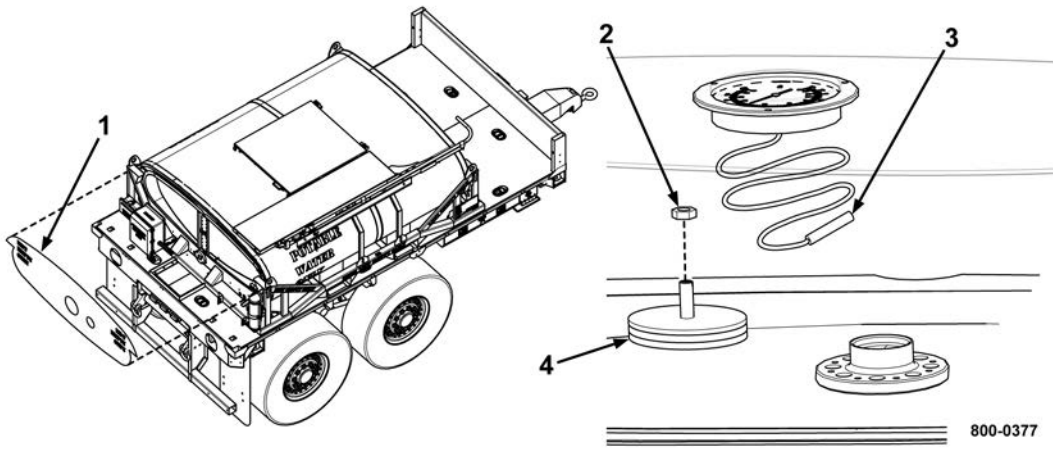


Figure 3. Rear End Cap Removal.

END OF TASK

DISASSEMBLY

Water Temperature Indicator Removed (WP 0078).

END OF TASK

ASSEMBLY

Install Water Temperature Indicator (WP 0078).

END OF TASK

INSTALLATION

NOTE

Remove old adhesive from end cap before re-installing. Apply new adhesive as needed.

1. Seat water temperature indicator sensor (Figure 3, Item 3) between foam washers (Figure 3, Item 4).
2. Tighten nut (Figure 3, Item 2) until sensor is held firmly in place.
3. Place rear end cap (Figure 2, Item 1) onto water tank (Figure 2, Item 2).

NOTE

If rivets will not install correctly in pre-drilled hole, drill a new proper size hole approximately ½ in. to left or right of existing hole and install new rivet.

4. Install 3/16 in. rivets along top portion of rear end cap (Figure 2, Item 1).

INSTALLATION - Continued

5. Install 1/8 in. rivets along lower portion of rear end cap (Figure 2, Item 1).
6. Install new adhesive around outer edge of rear end cap (Figure 2, Item 1).
7. Install new lock washer (Figure 1, Item 5), nut (Figure 1, Item 1), and two screws (Figure 1, Item 2) on each of the four gauge attachment arms (Figure 1, Item 3) connected to the mounting flange (Figure 1, Item 4).
8. Torque nuts (Figure 1, Item 1) to 32 lb-ft (43.39 N•m).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Water Level Indicator Gauge Assembly (WP 0083).
2. Install Discharge Box Assembly (WP 0140).
3. Install Catwalk Ladder (WP 0099).
4. Fill Water Tank (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WATER LEVEL INDICATOR GAUGE MECHANISM REPLACEMENT

INITIAL SETUP:

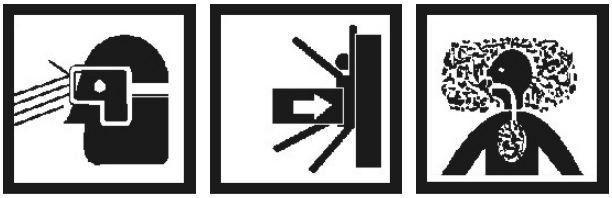
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Wrench, Torque, Click, Ratcheting, 3/8 in. Drive, 75 lb-ft (WP 0191, Table 1, Item 18)

Materials/Parts
Clear Sealant (WP 0190, Table 1, Item 22)
Lock Washer Qty: 8 (WP 0165, Figure 11, Item 4)

Personnel Required
Two

Equipment Condition
Water Tank Drained (WP 0005)
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Ladder Deployed (WP 0006)
Water Level Indicator Gauge Assembly Removed (WP 0083)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- A confined space entry permit is required before entering the water tank. No one is to enter the tank without a permit, the required training, and necessary personal protective equipment.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Proper protective foot wear required to enter tank. Do not enter tank with any materials, tools, or clothing that contain metal parts. Failure to comply may result in damage to equipment.

This work package covers:

Removal and Installation of Water Level Indicator Gauge Mechanism.

REMOVAL

1. Remove eight nuts (Figure 1, Item 1) and lock washers (Figure 1, Item 2) (discard lock washers) that attach water level gauge mechanism (Figure 1, Item 4) to water tank (Figure 1, Item 4).

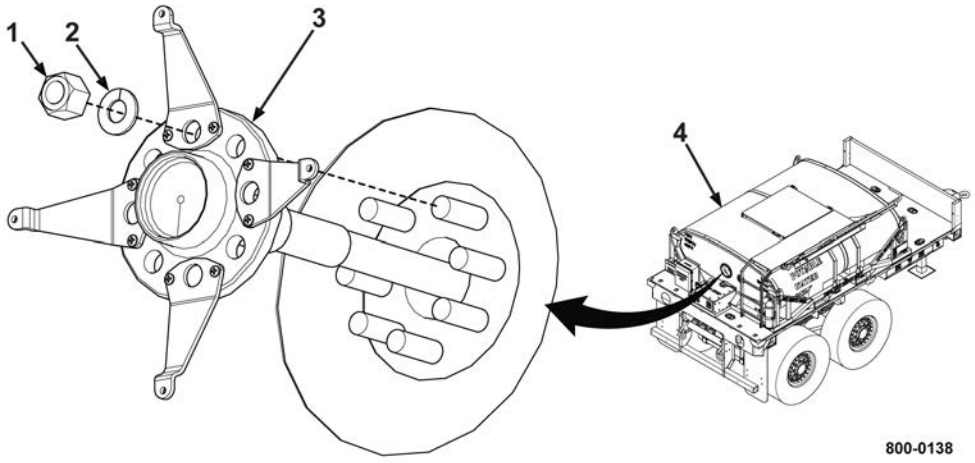


Figure 1. Water Level Gauge Mechanism.

2. Have assistant enter inside the water tank to hold the water level gauge mechanism (Figure 2, Item 1) level with tank opening (Figure 2, Item 2). Remove water level gauge mechanism (Figure 2, Item 1) from water tank.
3. Remove gasket (Figure 2, Item 3) from backside of gauge mechanism flange (Figure 2, Item 4).

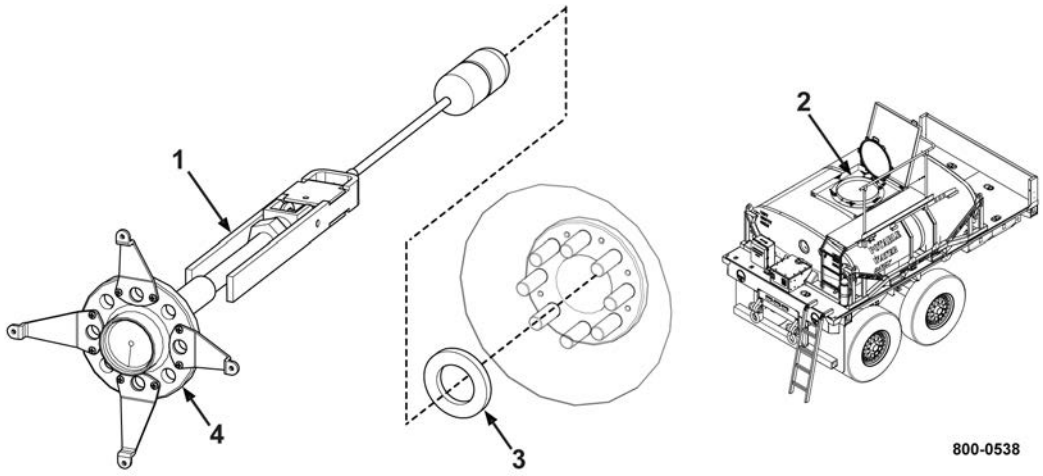


Figure 2. Water Level Gauge Mechanism Removal.

END OF TASK

INSTALLATION

1. Slide gasket (Figure 3, Item 1) onto water level gauge mechanism (Figure 3, Item 2). Apply small amount of silicone to backside of gasket, seat gasket onto mounting flange (Figure 3, Item 3).

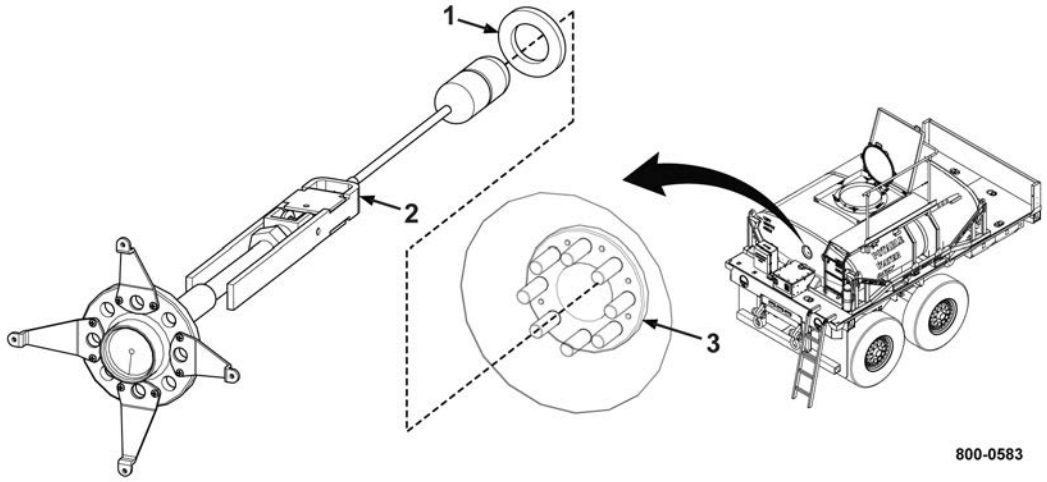


Figure 3. Water Level Gauge Mechanism Installation.

2. Position water level gauge mechanism (Figure 4, Item 1) so that marking OBEN (Figure 4, Item 2) is in the UP position. Slide gauge mechanism into place on water tank (Figure 4, Item 3).

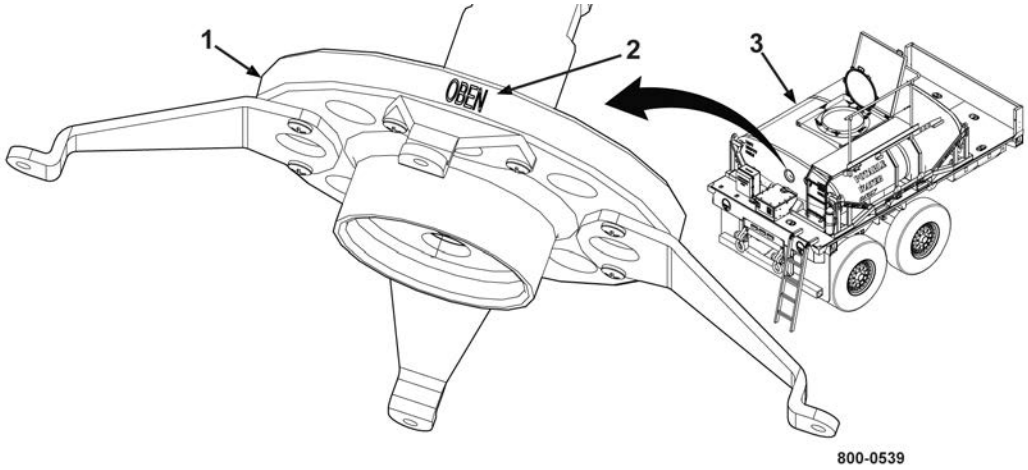


Figure 4. Water Level Gauge Mechanism Positioning.

INSTALLATION - Continued

3. Install eight new lock washers (Figure 5, Item 2) and nuts (Figure 5, Item 1).
4. Torque nuts (Figure 5, Item 1) to 32 lb-ft (43.39 N•m).

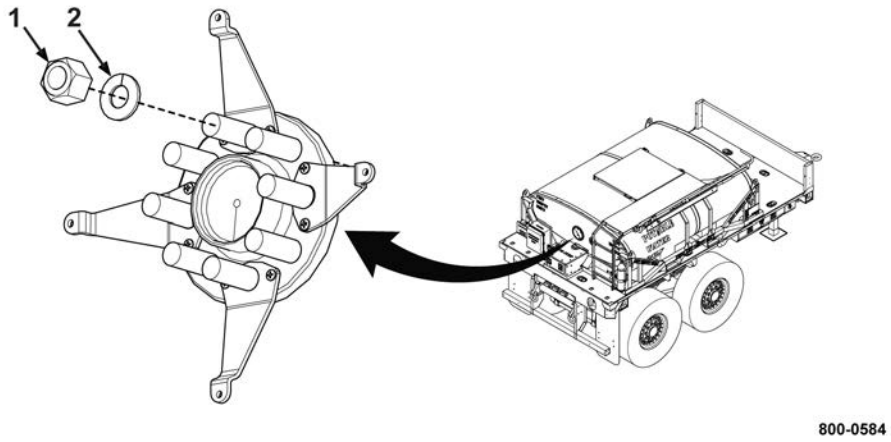


Figure 5. Water Level Gauge Mechanism Lock Washer and Nut Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Fill water tank (WP 0005), check water level indicator gauge mechanism for leaks.
2. Install Water Level Indicator Gauge Assembly (WP 0083).
3. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WATER LEVEL INDICATOR GAUGE ASSEMBLY REPAIR

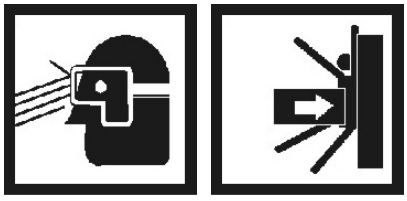
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Wrench, Torque, Click, Ratcheting, 3/8 in. Drive, 75 lb-ft (WP 0191, Table 1, Item 18)

Equipment Condition
Trailer Ladder Deployed (WP 0006)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0165, Figure 11

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Water level indicator gauge assembly is attached by bolts at 12, 3, 6 and 9 O'clock positions.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Water Level Indicator Gauge Assembly.

REMOVAL

NOTE

Water level indicator gauge assembly is attached by bolts at 12, 3, 6 and 9 O'clock positions.

1. Remove four bolts (Figure 1, Item 1) that attach water level indicator gauge assembly (Figure 1, Item 2) to attachment arms (Figure 1, Item 3) and remove water level indicator gauge assembly.
2. Loosen two screws (Figure 1, Item 4) and nut (Figure 1, Item 5) on four attachment arms (Figure 1, Item 3).
3. Remove gasket (Figure 1, Item 6) from behind attachment arms (Figure 1, Item 3).

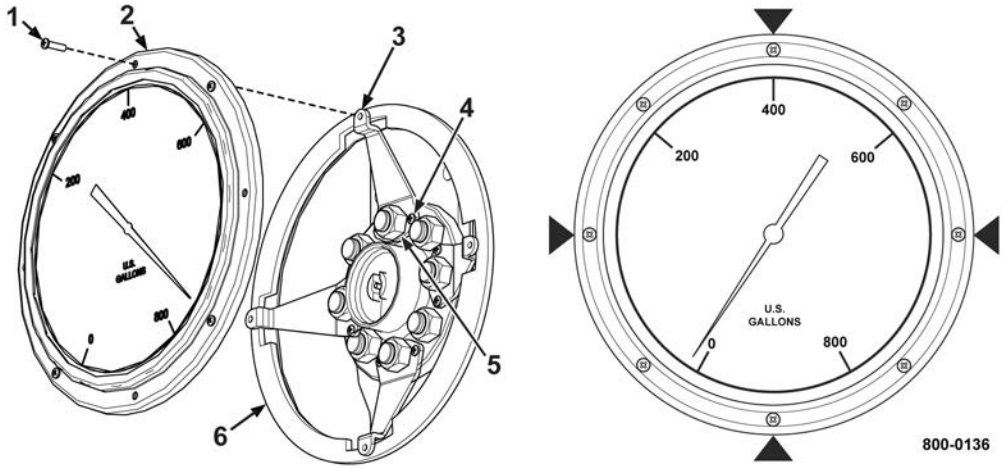


Figure 1. Water Level Indicator Removal.

END OF TASK

DISASSEMBLY

1. Remove four bolts (Figure 2, Item 7) and square nuts (Figure 2, Item 1) that connect front collar (Figure 2, Item 8) to water level indicator (Figure 2, Item 2).
2. Remove window gasket (Figure 2, Item 6), indicator window (Figure 2, Item 5) and window gasket (Figure 2, Item 4) from water level indicator (Figure 2, Item 2).
3. Remove water level needle (Figure 2, Item 3) from water level indicator (Figure 2, Item 2).

DISASSEMBLY - Continued

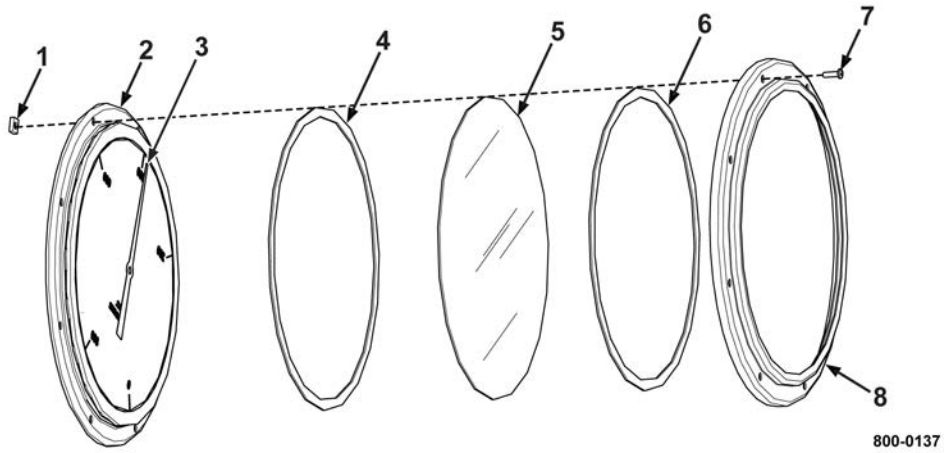


Figure 2. Water Level Indicator Gauge Assembly Disassembly and Assembly.

END OF TASK

ASSEMBLY

1. Place water level needle (Figure 2, Item 3) onto water level indicator (Figure 2, Item 2).
2. Place window gasket (Figure 2, Item 4), indicator window (Figure 2, Item 5) and window gasket (Figure 2, Item 6) onto water level indicator (Figure 2, Item 2).
3. Install four bolts (Figure 2, Item 7) and square nuts (Figure 2, Item 1) that connect front collar (Figure 2, Item 8) to water level indicator (Figure 2, Item 2).

END OF TASK

INSTALLATION

NOTE

Attachment arms may need to be adjusted to align gauge mounting holes.

1. Place gasket (Figure 1, Item 6) behind attachment arms (Figure 1, Item 3).
2. Tighten two screws (Figure 1, Item 4) and nut (Figure 1, Item 5) on four attachment arms (Figure 1, Item 3).
3. Torque nuts (Figure 1, Item 5) to 32 lb-ft (43.39 N•m).

NOTE

Use magnet on back of gauge to move gauge needle to 0 position.

4. Place water level indicator gauge assembly (Figure 1, Item 2) onto attachment arms (Figure 1, Item 3).
5. Install four bolts (Figure 1, Item 1) that attach water level indicator (Figure 1, Item 2) to attachment arms (Figure 1, Item 3), tighten.

END OF TASK

FOLLOW-ON MAINTENANCE

Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
FRONT FLANGE COVER REPLACEMENT

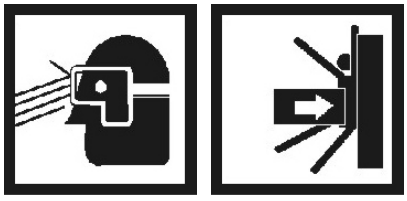
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Wrench, Torque, Click, Ratcheting, 1/2 in. Drive, 250 lb-ft (WP 0191, Table 1, Item 19)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Water Tank Drained (WP 0005)

References
WP 0166, Figure 12

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

There are two flanges on the front of the water tank. Each is installed and removed the same way.

This work package covers:

Removal and Installation of Front Flange Cover.

REMOVAL

1. Remove two lower bolts (Figure 1, Item 1) and flat washers (Figure 1, Item 2).
2. Remove two upper bolts (Figure 1, Item 3) and flat washers (Figure 1, Item 4).
3. Remove flange (Figure 1, Item 5) and gasket (Figure 1, Item 6) from water tank (Figure 1, Item 7).

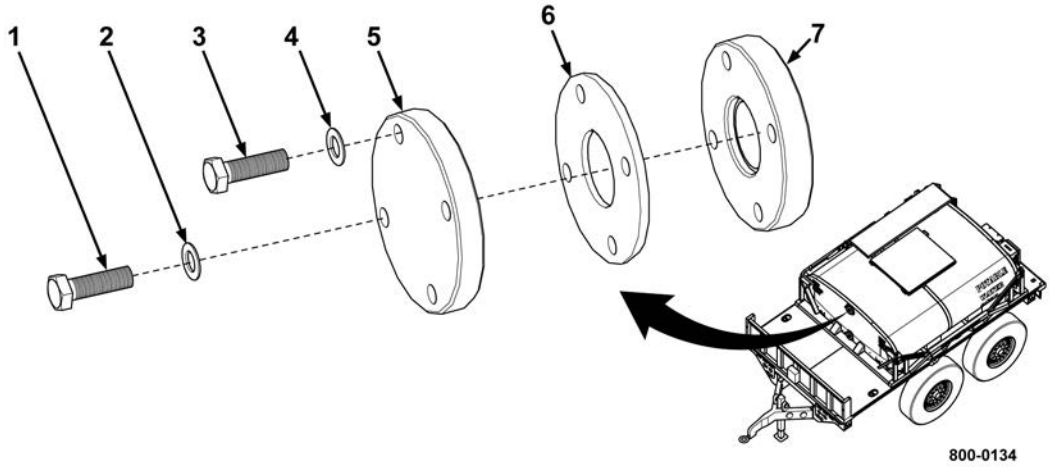


Figure 1. Front Flange Cover Removal.

END OF TASK

INSTALLATION

1. Place two lower bolts (Figure 2, Item 1) and flat washers (Figure 2, Item 2) into bottom holes of flange (Figure 2, Item 5).
2. Rest gasket (Figure 2, Item 6) on inside of flange (Figure 2, Item 5) against lower bolts (Figure 2, Item 1).
3. Install flange (Figure 2, Item 5) and gasket (Figure 2, Item 6) onto water tank (Figure 2, Item 7). Hand tighten lower bolts (Figure 2, Item 1).
4. Install two upper bolts (Figure 2, Item 3) and flat washers (Figure 2, Item 4). Hand tighten upper bolts.
5. Torque bolts in a cross pattern to 30 lb-ft (40.68 N•m) each.

INSTALLATION - Continued

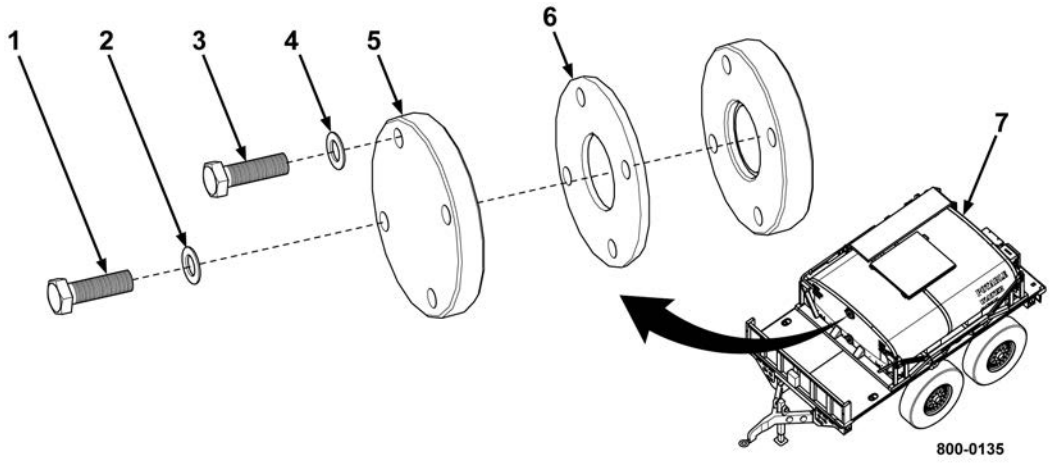


Figure 2. Front Flange Cover Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Fill Water Tank (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPILL BOX LOCKING ARM REPLACEMENT

INITIAL SETUP:

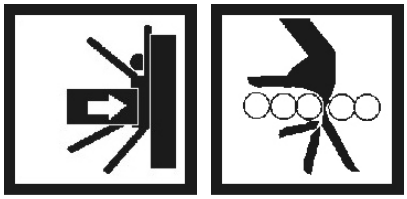
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Hexagon (WP 0167, Figure 13, Item 5)

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Spill Box Locking Arm.

REMOVAL

1. Raise spill box lid (Figure 1, Item 1) to UP position and lock into place with spill box locking arm (Figure 1, Item 2).
2. Remove locknut (Figure 1, Item 3) (discard locknut) from spill box locking arm (Figure 1, Item 2).
3. While supporting spill box lid (Figure 1, Item 1) remove bolt (Figure 1, Item 4) and spill box locking arm (Figure 1, Item 2).
4. Lower spill box lid (Figure 1, Item 1) to closed position.

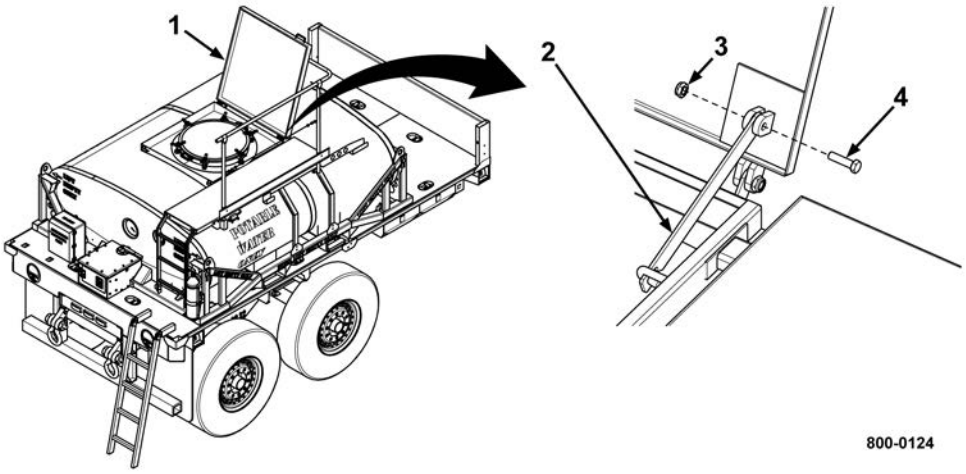


Figure 1. Spill Box Locking Arm Removal.

END OF TASK

INSTALLATION

1. Open and support spill box lid (Figure 2, Item 1) in UP position.
2. Align spill box locking arm (Figure 2, Item 2) with mounting bracket (Figure 2, Item 5) ensuring that cutout (Figure 2, Item 6) is facing down.
3. Install bolt (Figure 2, Item 4) and new locknut (Figure 2, Item 3). Tighten.
4. Place spill box locking arm (Figure 2, Item 2) inside locking arm guide (Figure 2, Item 7), then allow spill box lid (Figure 2, Item 1) to close.
5. Secure spill box lid (Figure 2, Item 1) with latches (Figure 2, Item 8).

INSTALLATION - Continued

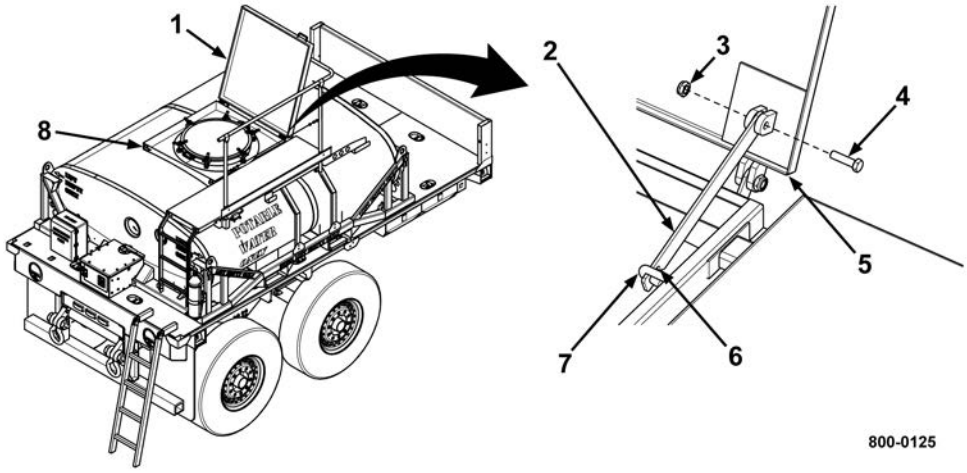


Figure 2. Spill Box Locking Arm Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPILL BOX LATCH REPLACEMENT

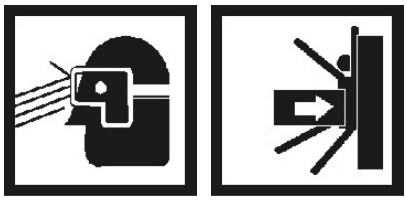
INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
- Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
- Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
- Blind, Steel, 0.126 Rivet (WP 0167, Figure 13, Item 10)

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Trailer Ladder Deployed (WP 0006)
- Handrail Deployed (WP 0007)

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Failure to comply could result in serious injury or death to personnel or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may cause damage to equipment.

This work package covers:

Removal and Installation of Spill Box Latch.

REMOVAL

Remove rivets (Figure 1, Item 1) and spill box latch (Figure 1, Item 2) from spill box lid (Figure 1, Item 3).

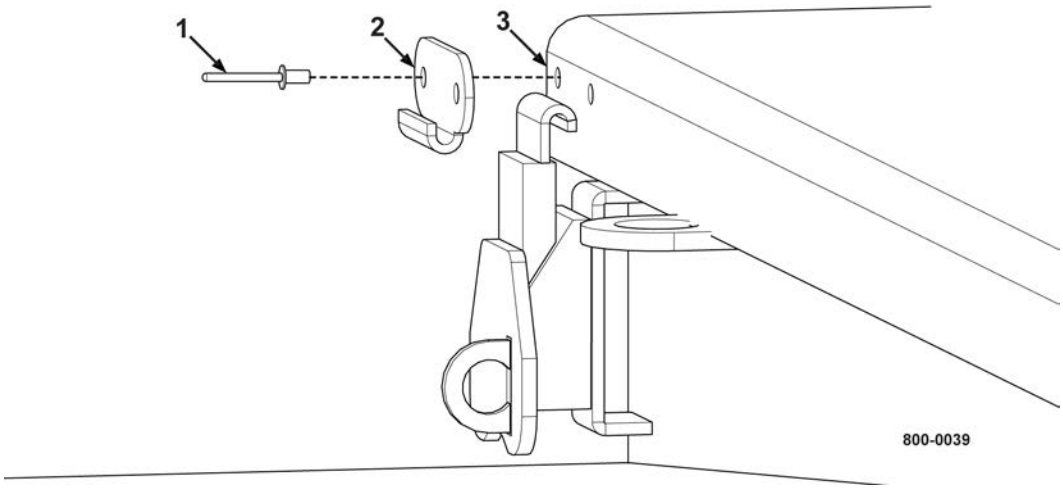


Figure 1. Spill Box Latch Replacement.

END OF TASK

INSTALLATION

Install spill box latch (Figure 1, Item 2) and rivets (Figure 1, Item 1) to spill box lid (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Secure Spill Box Lid.
2. Stow Handrail (WP 0007).
3. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPILL BOX LID REPLACEMENT

INITIAL SETUP:

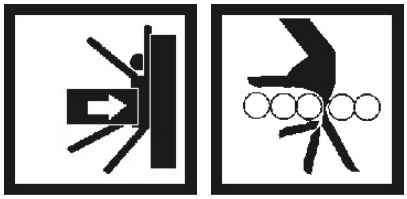
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Hexagon, Nylon Qty: 2 (WP 0167, Figure 13, Item 6)
Screw Qty: 2 (WP 0167, Figure 13, Item 8)

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Spill Box Locking Arm Removed (WP 0085)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Remove paint from screw threads prior to removing nuts. The spill box lid has two hinges, hardware for each is removed the same way.

This work package covers:

Removal and Installation of Spill Box Lid.

REMOVAL

1. With spill box lid (Figure 1, Item 1) in closed position, remove locknut (Figure 1, Item 2) (discard locknut), two flat washers (Figure 1, Item 3), and screw (discard screw) (Figure 1, Item 4) from each hinge (Figure 1, Item 5).
2. Remove spill box lid (Figure 1, Item 1) from spill box (Figure 1, Item 6).

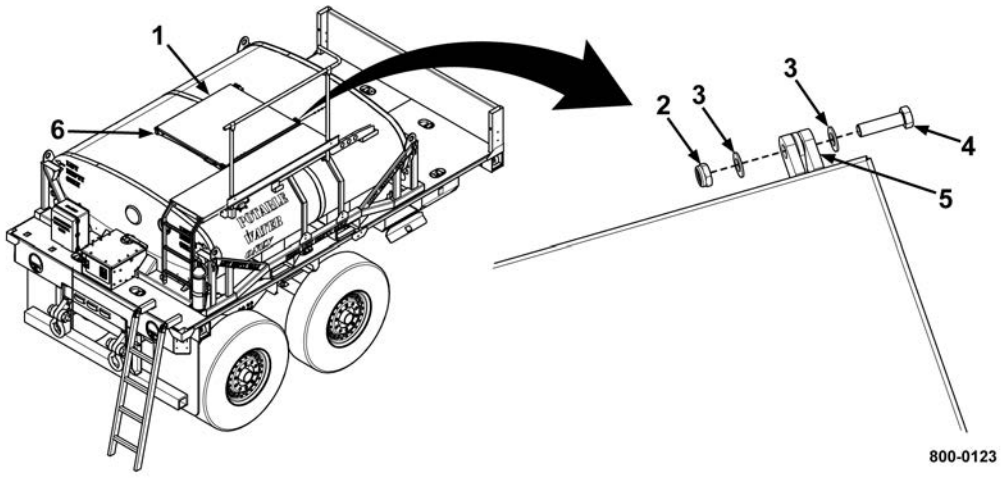


Figure 1. Spill Box Lid Replacement.

END OF TASK

INSTALLATION

NOTE

The spill box lid has two hinges, hardware for each is installed the same way.

1. Place spill box lid (Figure 1, Item 1) onto spill box (Figure 1, Item 6) in closed position with hinge (Figure 1, Item 5) mount holes aligned.
2. Install new screw (Figure 1, Item 4), two flat washers (Figure 1, Item 3), and new locknut (Figure 1, Item 2) in each hinge (Figure 1, Item 5). Do not over tighten.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Spill Box Locking Arm (WP 0085)
2. Stow Handrail (WP 0007).
3. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
RELIEF VALVE ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Thread Tape (WP 0190, Table 1, Item 14)

References
WP 0168, Figure 14

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

There are three pressure valve assemblies, each is removed and installed the same way. The roadside valve assembly is a different part number from the other two valve assemblies.

This work package covers:

Removal and Installation of Relief Valve Assembly.

REMOVAL

1. Open spill box lid (Figure 1, Item 3)
2. Unscrew relief valve assembly (Figure 1, Item 1) from water tank (Figure 1, Item 2).

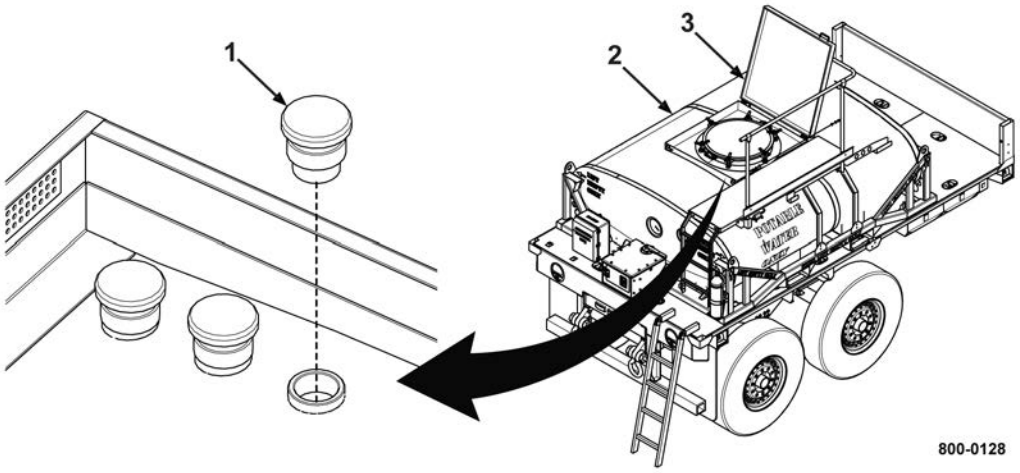


Figure 1. Relief Valve Assembly Replacement.

END OF TASK

INSTALLATION

1. Apply thread tape, clean as needed.
2. Install relief valve assembly (Figure 1, Item 1) onto water tank (Figure 1, Item 2).
3. Close spill box lid (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MANHOLE LATCHING BOLT REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0169, Figure 15

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

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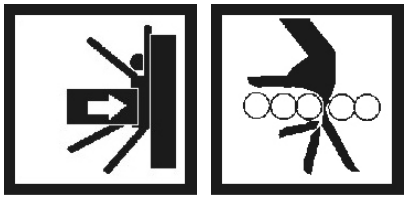

- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This Work Package Covers:

Removal and Installation of Manhole Latching Bolt.

REMOVAL

NOTE

Manhole cover has six latching bolts, mounting hardware for each is removed the same way.

1. Raise spill box lid (Figure 1, Item 1) to open locked position.
2. Loosen wing nut (Figure 1, Item 2) of manhole latching bolt (Figure 1, Item 3) to be removed.
3. Remove set screw (Figure 1, Item 4).
4. Slide retaining pin (Figure 1, Item 5) out of latching bolt mount (Figure 1, Item 6) and remove bolt (Figure 1, Item 3).

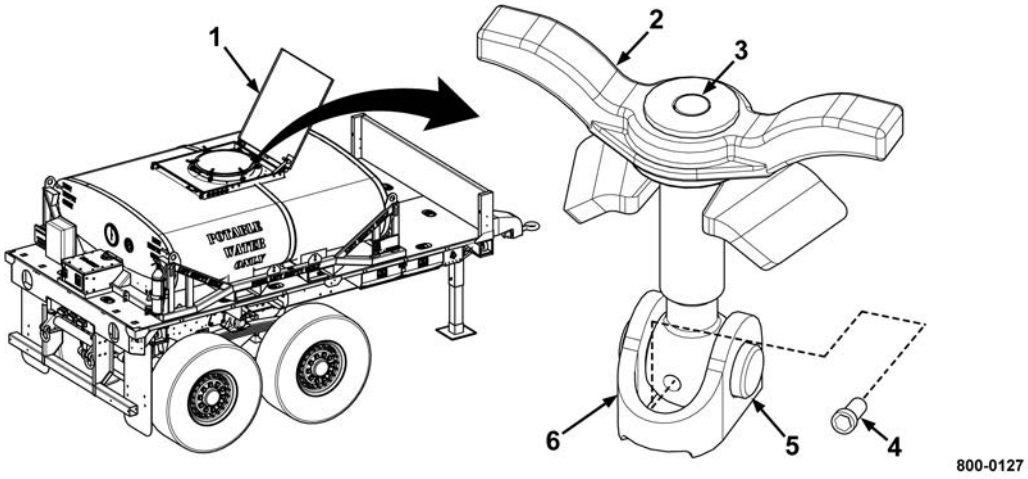

Figure 1. Manhole Latching Bolt Replacement.

END OF TASK

INSTALLATION

NOTE

Manhole cover has six manhole latching bolts, mounting hardware for each is installed the same way.

1. Raise spill box lid (Figure 1, Item 1) to open locked position.
2. Align latching bolt (Figure 1, Item 3) with bolt mount (Figure 1, Item 6) and install retaining pin (Figure 1, Item 5).
3. Install set screw (Figure 1, Item 4).
4. Tighten wing nut (Figure 1, Item 2) of installed manhole latching bolt (Figure 1, Item 3).
5. Close spill box lid (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).

FOLLOW-ON MAINTENANCE - Continued

2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MANHOLE COVER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut (WP 0169, Figure 15, Item 8)

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

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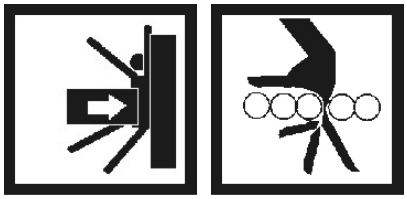


- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This Work Package Covers:

Removal and Installation of Manhole Cover.

REMOVAL

1. Raise spill box lid (Figure 1, Item 1) to open locked position.
2. Loosen and rotate six manhole latching bolts (Figure 1, Item 3) off manhole cover (Figure 1, Item 2).
3. Remove locknut (Figure 1 Item 4) (discard locknut) from one side of hinge bolt (Figure 1, Item 8)
4. Slide hinge bolt (Figure 1, Item 8) from hinge brackets (Figure 1, Item 6), removing four flat washers (Figure 1, Items 5 and 7), and manhole cover (Figure 1, Item 2).

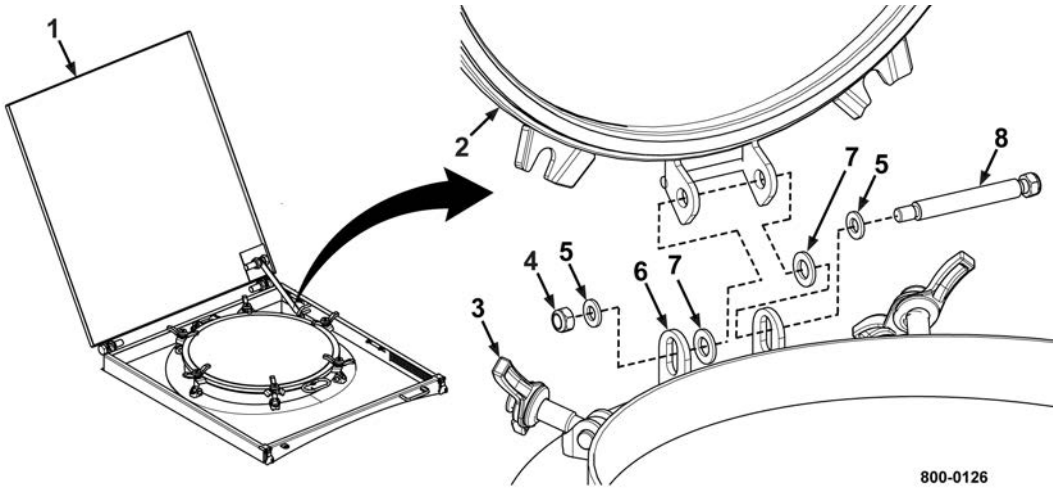


Figure 1. Manhole Cover Replacement.

END OF TASK

INSTALLATION

1. Raise spill box lid (Figure 1, Item 1) to the open locked position.
2. Align hinge brackets (Figure 1, Item 6) for manhole cover (Figure 1, Item 2), placing two larger flat washers (Figure 1, Item 7) between manhole cover (Figure 1, Item 2) and hinge brackets (Figure 1, Item 6).
3. Place one small flat washer (Figure 1, Item 5) onto the hinge bolt (Figure 1, Item 8) and slide the hinge bolt through the manhole cover (Figure 1, Item 2) and hinge brackets (Figure 1, Item 6).
4. Install one small washer (Figure 1, Item 5) onto the end of the hinge bolt (Figure 1, Item 8) and new locknut (Figure 1, Item 4)
5. Secure manhole cover (Figure 1, Item 2) with six manhole latching bolts (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MANHOLE COVER SEAL REPLACEMENT

INITIAL SETUP:

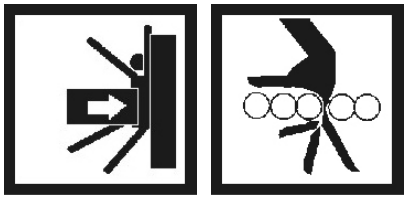
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0169, Figure 15

Equipment Condition
Trailer Ladder Deployed (WP 0006)

Equipment Condition (cont.)
Handrail Deployed (WP 0007)
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock wheels before working on or in the water tank.
- There is a pinch hazard when opening, locking in place and closing lids, doors, or access covers. Use caution and wear protective gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This Work Package Covers:

Removal and Installation of Manhole Cover Seal.

REMOVAL

NOTE

Manhole cover seal is not glued in place and can be removed with flat tip screwdriver.

With a flat tip screwdriver pry manhole cover seal (Figure 1, Item 1) from manhole cover (Figure 1, Item 2).

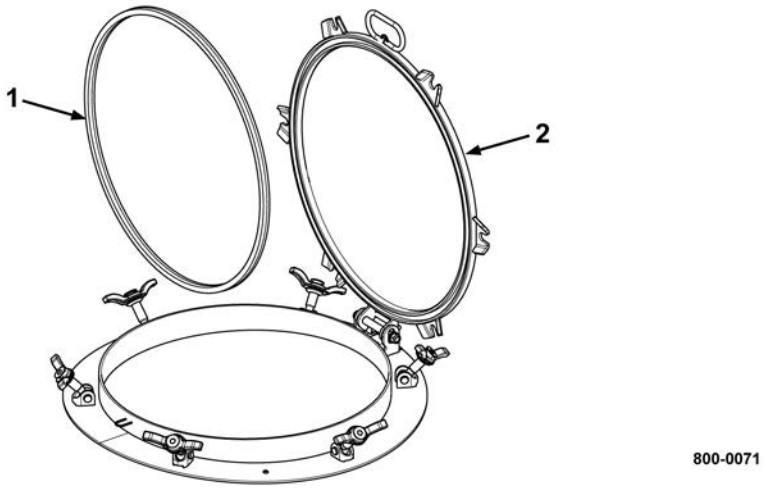


Figure 1. Manhole Cover Seal Removal.

END OF TASK

INSTALLATION

NOTE

Manhole cover seal is not glued in place and can be installed with flat tip screwdriver.

1. Ensure manhole cover seal seating ring (Figure 2, Item 2) is clean and serviceable.
2. Start inner edge of manhole cover seal (Figure 2, Item 1) into seating ring (Figure 2, Item 2).
3. With flat tip screwdriver seat outer edge of seal (Figure 2, Item 1) into seating ring (Figure 2, Item 2).
4. With firm pressure push manhole cover seal (Figure 2, Item 1) into seating ring (Figure 2, Item 2).

INSTALLATION - Continued

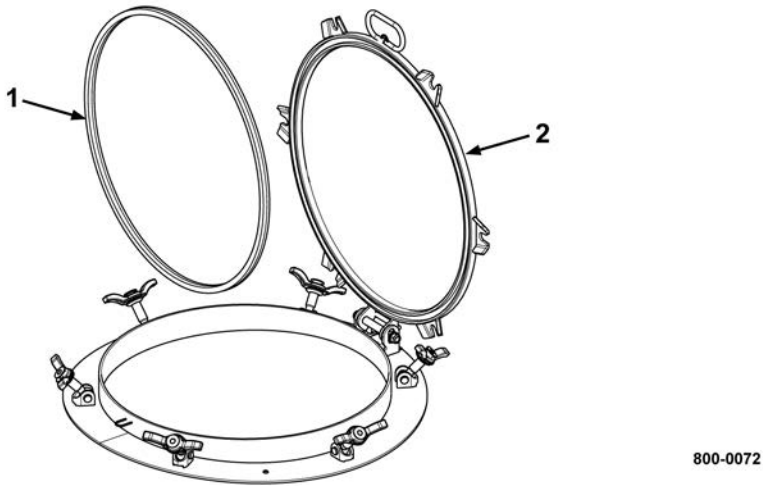


Figure 2. Manhole Cover Seal Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DATA PLATE REPLACEMENT

INITIAL SETUP:

Materials/Parts
Acrylic Foam, Black Tape (WP 0170, Figure 16, Item 2)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

Trailer must be secure. Always chock wheels before working on or under the Camel II. Failure to comply could result in serious injury or death to personnel or damage to equipment.

NOTE

All data plates can be taped over existing data plate.

This work package covers:

Installation of Data Plate.

INSTALLATION

1. Place double sided tape (Figure 1, Item 1) along outer edge of data plate (Figure 1, Item 2) to be installed.
2. Peel back protective cover (Figure 1, Item 3) from double sided tape (Figure 1, Item 1).
3. Install data plate over existing data plate (Figure 1, Item 2).

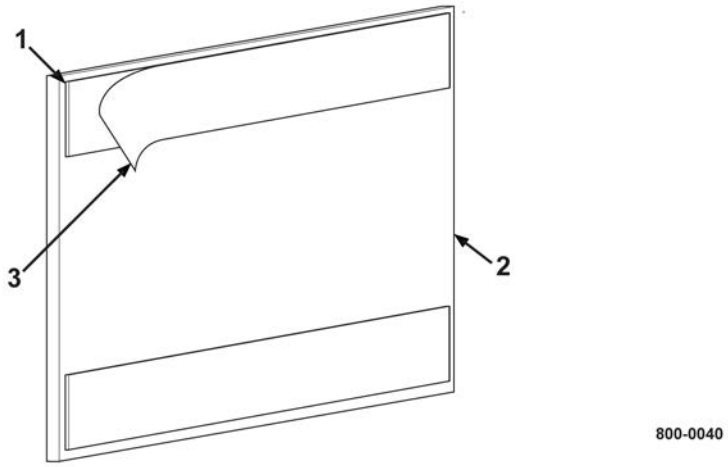


Figure 1. Data Plate Replacement.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK ASSEMBLY REPLACEMENT

INITIAL SETUP:

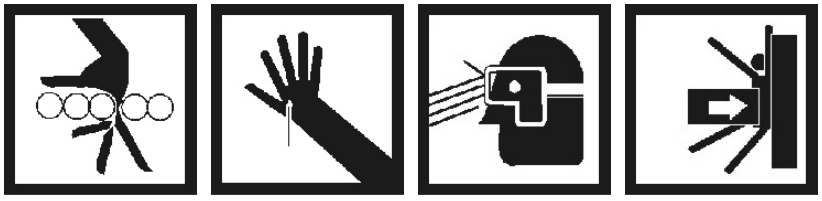
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Lifting Device (2,500-lb capacity)

Materials/Parts
Lock Washer Qty: 12 (WP 0171, Figure 17, Item 3)

Personnel Required
Two

Equipment Condition
Water Tank Removed (WP 0074)

WARNING



- Ensure catwalk assembly is properly supported when removing mounting bolts. Catwalk assembly may shift or fall.
- Wear proper gloves when handling and removing the catwalk assembly.
- Wear eye protection when working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Catwalk Assembly.

REMOVAL

1. Open spill box lid (Figure 1, Item 1).
2. Remove four nuts (Figure 1, Item 2), lock washers (Figure 1, Item 3) (discard lock washers), eight flat washers (Figure 1, Item 4), and four bolts (Figure 1, Item 5) connecting catwalk assembly (Figure 1, Item 6) to spill box frame (Figure 1, Item 7).

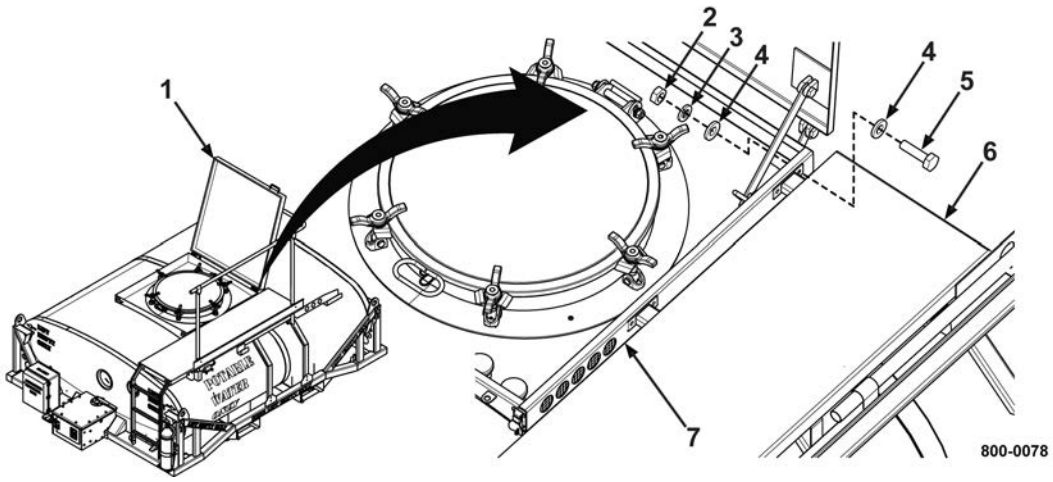


Figure 1. Catwalk Assembly Removal from Spill Box Frame.

3. Remove four nuts (Figure 2, Item 1), lock washers (Figure 2, Item 2) (discard lock washers), eight flat washers (Figure 2, Item 3), and four bolts (Figure 2, Item 4) connecting catwalk support legs (Figure 2, Item 5) to water tank frame (Figure 2, Item 6).

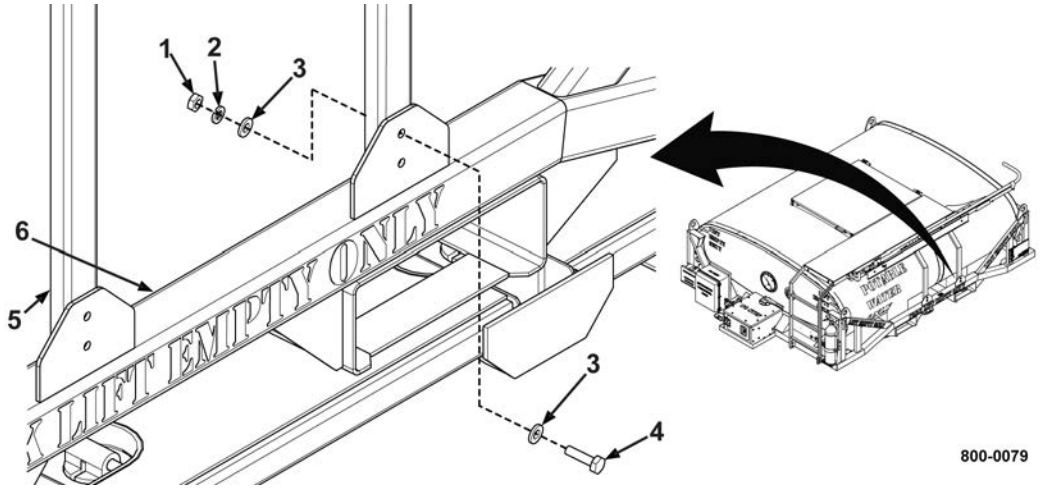


Figure 2. Catwalk Support Legs Replacement.

REMOVAL - Continued

4. Remove four nuts (Figure 3, Item 1), lock washers (Figure 3, Item 2) (discard lock washers), eight flat washers (Figure 3, Item 3), and four bolts (Figure 3, Item 4) connecting catwalk ladder (Figure 3, Item 5) to water tank frame (Figure 3, Item 6).

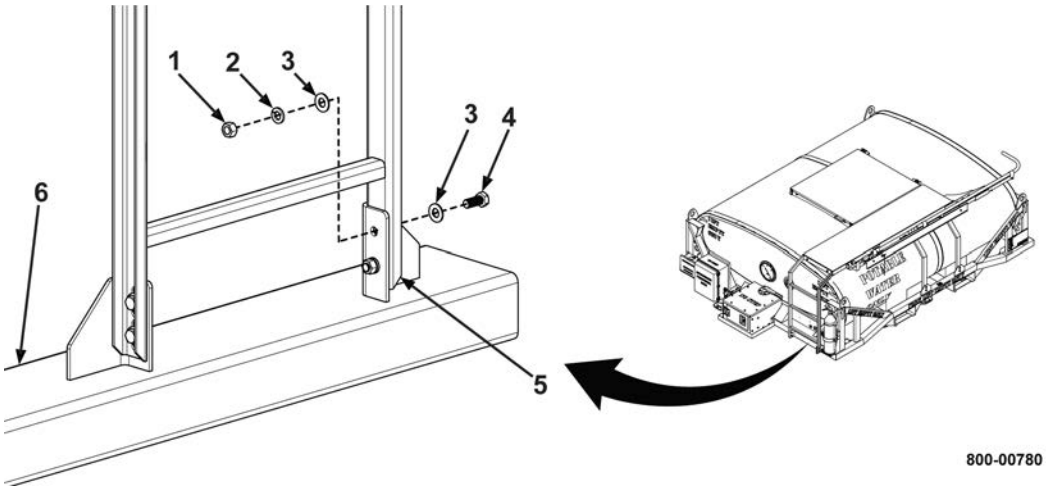


Figure 3. Catwalk Ladder Replacement.

NOTE

Catwalk assembly weighs 53 lb.

5. With help of an assistant, remove catwalk assembly (Figure 4, Item 1) from water tank (Figure 4, Item 2) and place on suitable work space.

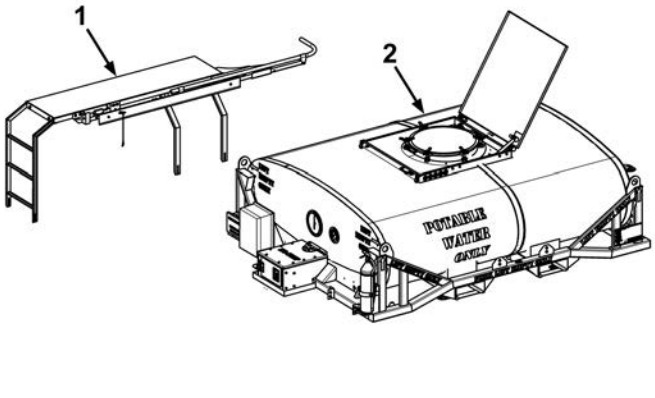


Figure 4. Catwalk Assembly Replacement.

END OF TASK

INSTALLATION

NOTE

Catwalk Assembly weighs 53 lb.

1. With help of an assistant, place catwalk assembly (Figure 4, Item 1) onto water tank (Figure 4, Item 2).
2. Align lower mounting holes of catwalk support legs (Figure 2, Item 5) to water tank frame (Figure 2, Item 6).
3. Install four bolts (Figure 2, Item 4), eight flat washers (Figure 2, Item 3), four new lock washers (Figure 2, Item 2), and nuts (Figure 2, Item 1). Tighten firmly.
4. Align lower mounting holes of catwalk ladder (Figure 3, Item 5) to water tank frame (Figure 3, Item 6).
5. Install four bolts (Figure 3, Item 4), eight flat washers (Figure 3, Item 3), four new lock washers (Figure 3, Item 2), and nuts (Figure 3, Item 1). Tighten firmly.
6. Align upper mounting holes of catwalk assembly (Figure 1, Item 6) to spill box frame (Figure 1, Item 7).
7. Install four bolts (Figure 1, Item 5), eight flat washers (Figure 1, Item 4), four new lock washers (Figure 1, Item 3), and nuts (Figure 1, Item 2). Tighten firmly.
8. Close spill box lid (Figure 1, Item 1)

END OF TASK

OPERATIONAL CHECK

Install Water Tank (WP 0074).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL LOCKING LATCH BRACKET REPLACEMENT

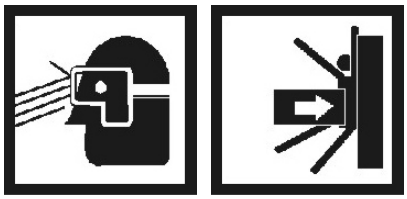
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Handrail Stowed (WP 0007)

Materials/Parts
Lock Washer Qty: 2 (WP 0171, Figure 17, Item 7)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Handrail Locking Latch Bracket.

REMOVAL

Remove two nuts (Figure 1, Item 1), lock washers (Figure 1, Item 2) (discard lock washers), four flat washers (Figure 1, Item 3), and two bolts (Figure 1, Item 4) from handrail locking latch bracket (Figure 1, Item 5). Remove handrail locking latch bracket from catwalk platform (Figure 1, Item 6).

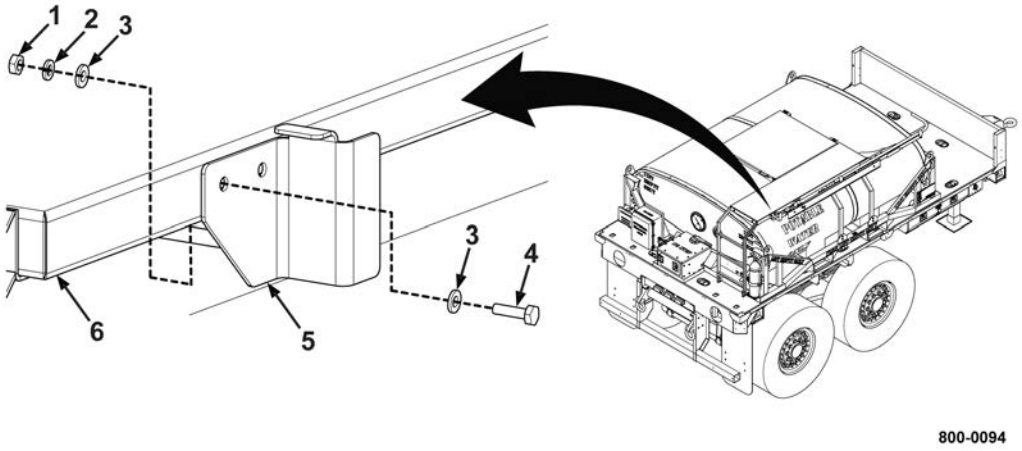


Figure 1. Handrail Locking Latch Bracket Replacement.

END OF TASK

INSTALLATION

1. Align mounting holes of handrail locking latch bracket (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).
2. Install two bolts (Figure 1, Item 4), four flat washers (Figure 1, Item 3), two new lock washers (Figure 1, Item 2), and nuts (Figure 1, Item 1). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

Handrail Deployed (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL LOCKING LATCH REPLACEMENT

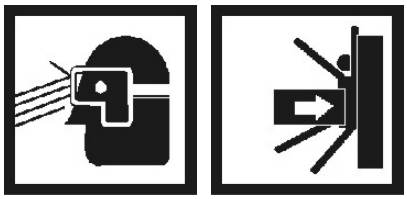
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Handrail Deployed (WP 0007)

Materials/Parts
Locknut Qty: 4 (WP 0171, Figure 17, Item 14)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Handrail Locking Latch.

REMOVAL

While supporting handrail in up position, remove four locknuts (Figure 1, Item 1) (discard locknuts), eight flat washers (Figure 1, Item 2), and four bolts (Figure 1, Item 3) from handrail locking latch (Figure 1, Item 4). Remove handrail locking latch (Figure 1, Item 4) from locking latch bracket (Figure 1, Item 5).

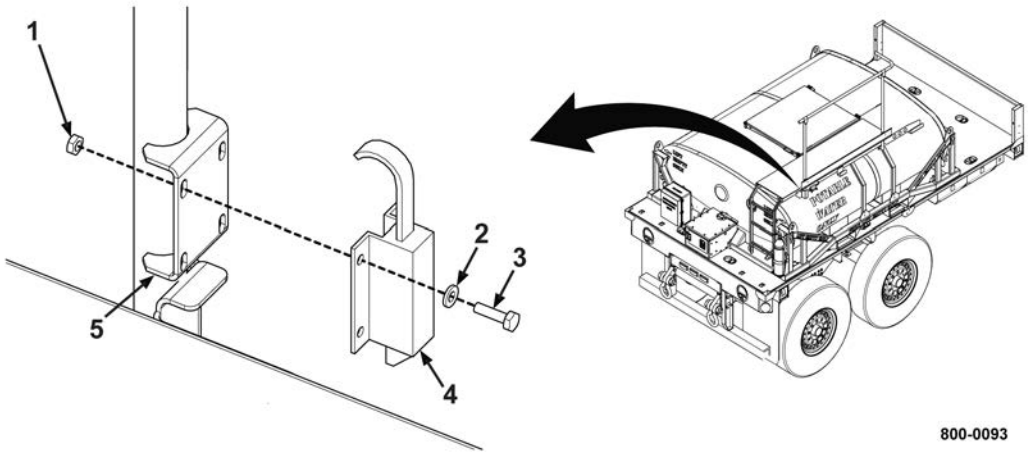


Figure 1. Handrail Locking Latch Replacement.

END OF TASK

INSTALLATION

1. Align mounting holes of handrail locking latch (Figure 1, Item 4) to handrail locking latch bracket (Figure 1, Item 5).
2. Install four bolts (Figure 1, Item 3), eight flat washers (Figure 1, Item 2), and four new locknuts (Figure 1, Item 1). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

Stow Handrail (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK INTERMEDIATE SAFETY CABLE REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Cap Qty: 2 (WP 0171, Figure 17, Item 17)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Wear leather-palmed work gloves when handling cable. Cables can become frayed or contain broken wires. Never let moving cable slide through hands, even when wearing gloves.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Catwalk Intermediate Safety Cable.

REMOVAL

Remove two locknuts (Figure 1, Item 1) (discard locknuts) from eye bolts (Figure 1, Item 2) that connect catwalk intermediate safety cable (Figure 1, Item 3) to handrail legs (Figure 1, Item 4).

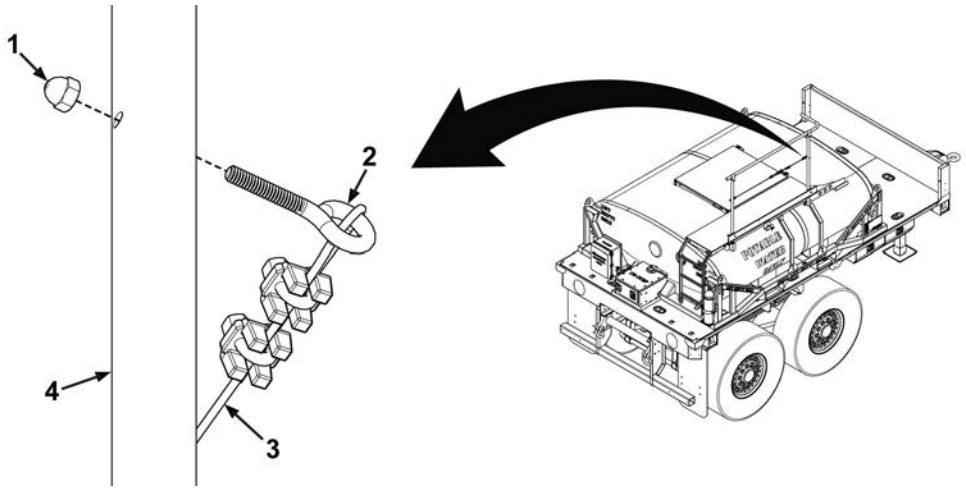


Figure 1. Catwalk Intermediate Safety Cable Removal.

END OF TASK

DISASSEMBLY

NOTE

Catwalk intermediate safety cables on each side of the safety extension spring are disassembled the same way.

1. Remove two nuts (Figure 2, Item 2) from four U-bolts (Figure 2, Item 3), slide U-bolts from wire rope terminals (Figure 2, Item 4) to release catwalk intermediate safety cable (Figure 2, Item 1).

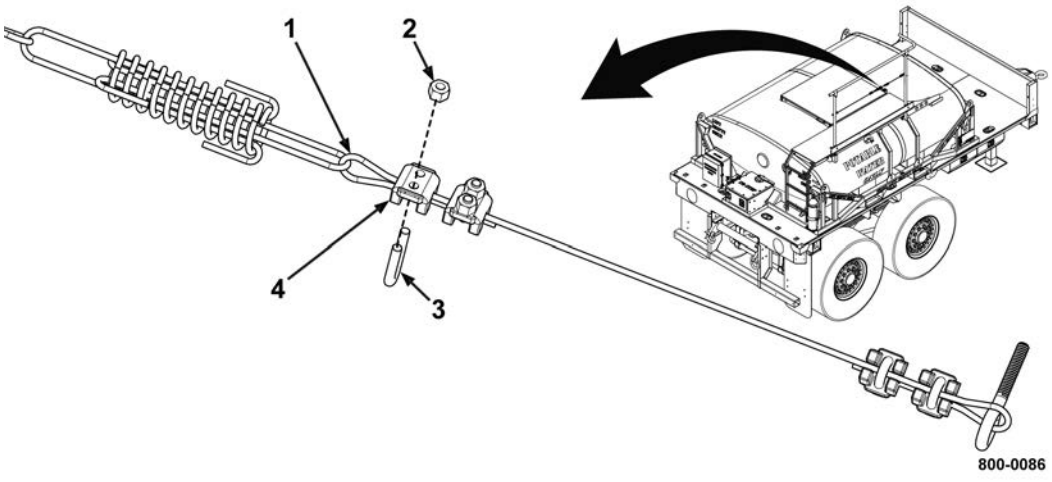


Figure 2. Catwalk Intermediate Safety Cable Disassembly.

DISASSEMBLY - Continued

2. Remove each catwalk intermediate safety cable (Figure 3, Item 2) from eye bolt (Figure 3, Item 1) and safety extension spring (Figure 3, Item 3).

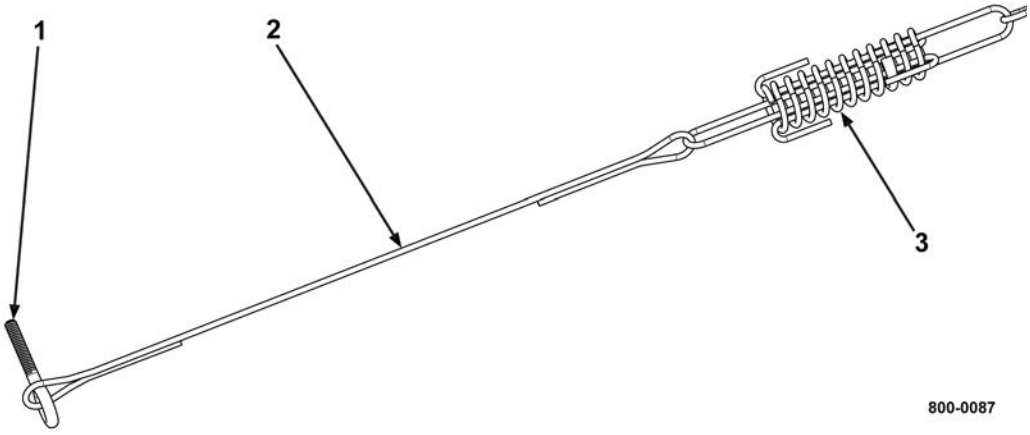


Figure 3. Eye Bolt and Extension Spring Removal.

END OF TASK

ASSEMBLY

NOTE

Catwalk intermediate safety cables on each side of the safety extension spring are assembled the same way but have different lengths.

1. Place catwalk intermediate safety cables (Figure 4, Item 2) through eye bolt (Figure 4, Item 1).
2. Install U-bolts (Figure 4, Item 4) over both pieces of catwalk intermediate safety cables (Figure 4, Item 2), then place wire rope terminals (Figure 4, Item 5) onto U-bolts (Figure 4, Item 4).
3. Install two nuts (Figure 4, Item 3) on each U-bolt (Figure 4, Item 4) and tighten firmly.

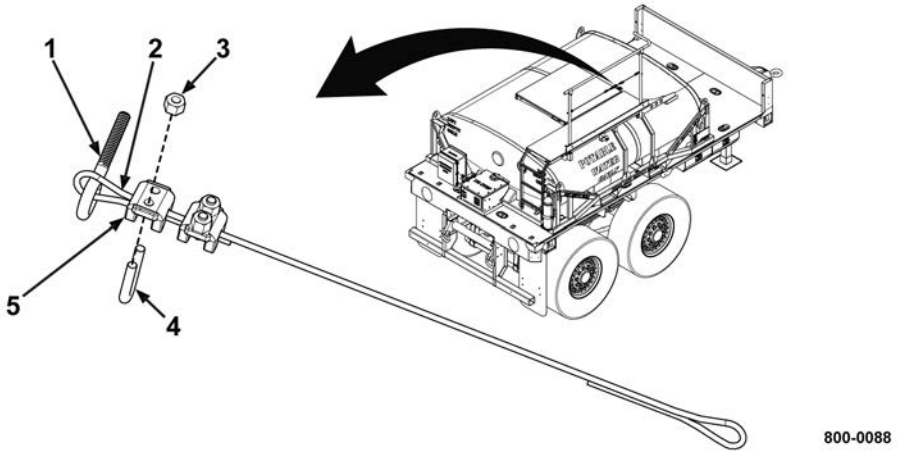


Figure 4. Catwalk Intermediate Safety Cable Assembly.

ASSEMBLY - Continued

4. Place other end of catwalk intermediate safety cables (Figure 5, Item 1) through end of safety extension spring (Figure 5, Item 5).
5. Install U-bolts (Figure 5, Item 3) over both pieces of catwalk intermediate safety cables (Figure 5, Item 1), then place wire rope terminals (Figure 5, Item 4) onto U-bolts (Figure 5, Item 3).
6. Install two nuts (Figure 5, Item 2) on each U-bolt (Figure 5, Item 3) but do not tighten.
7. Make catwalk intermediate safety cable being assembled appropriate length (see Figure 6), then tighten nuts (Figure 5, Item 2) firmly on each wire rope terminal (Figure 5, Item 4).

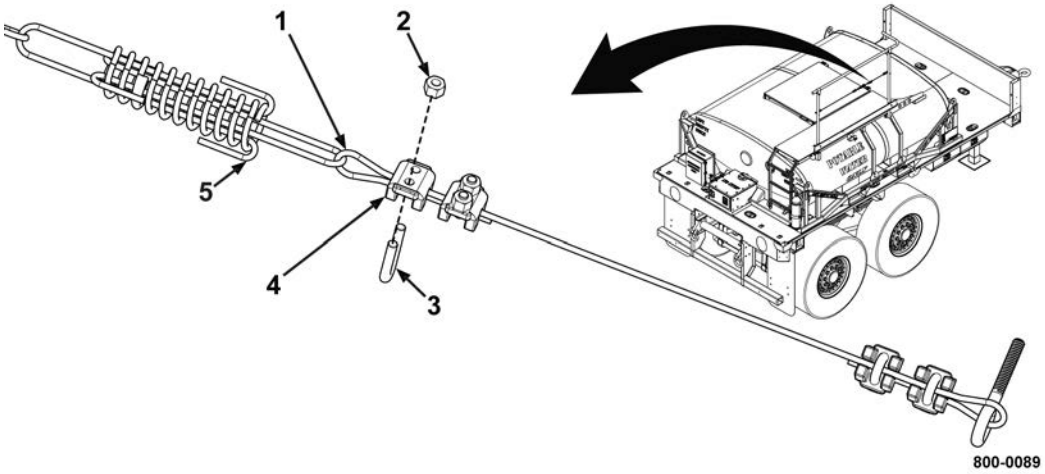


Figure 5. Attach Catwalk Intermediate Safety Cable to Safety Extension Spring.

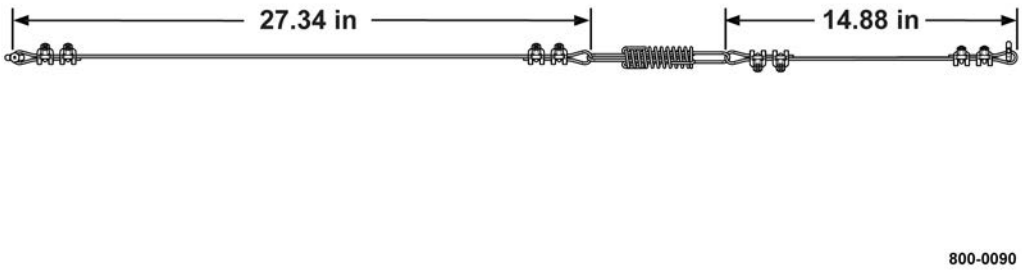


Figure 6. Catwalk Intermediate Safety Cable Dimensions.

END OF TASK

INSTALLATION

1. Install eye bolts (Figure 7, Item 2) into each catwalk leg (Figure 7, Item 3).
2. Install two new locknuts (Figure 7, Item 1) on eye bolts (Figure 7, Item 2), tighten firmly.

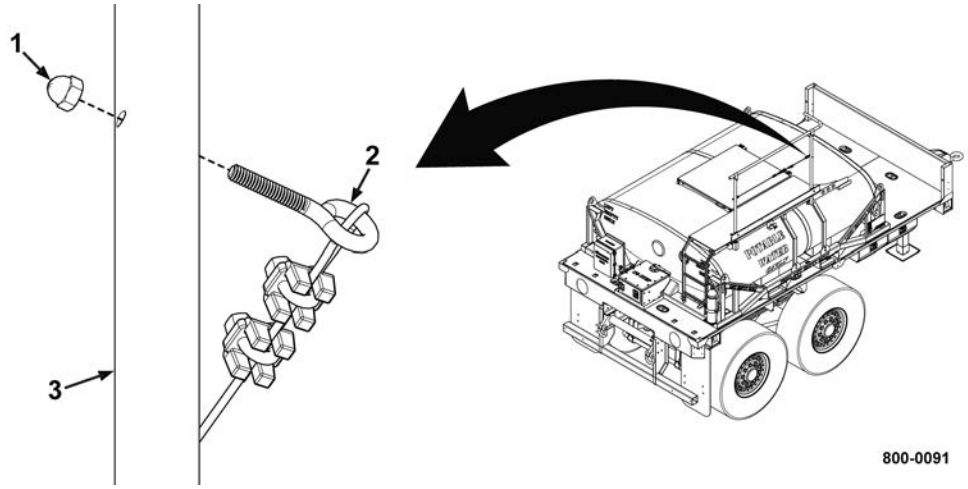


Figure 7. Catwalk Intermediate Safety Cable Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL TOP REPLACEMENT

INITIAL SETUP:

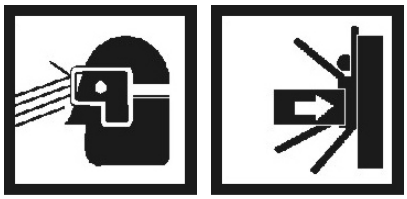
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Hexagon Qty: 2 (WP 0171, Figure 17, Item 28)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)
Catwalk Safety Cable Removed (WP 0096)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Handrail Top.

REMOVAL

1. Remove two locknuts (Figure 1, Item 1) (discard locknuts), flat washers (Figure 1, Item 2), and bolts (Figure 1, Item 3) from handrail top (Figure 1, Item 4).
2. Remove handrail top (Figure 1, Item 4) from handrail legs (Figure 1, Item 5).

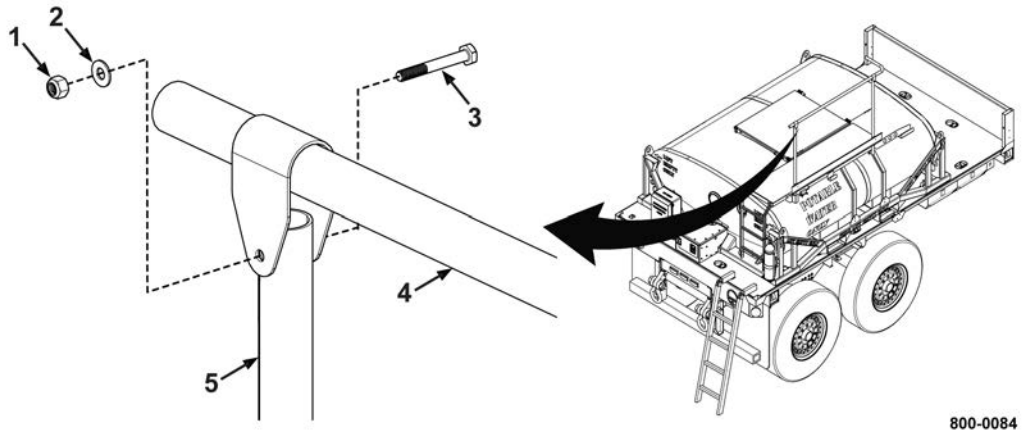


Figure 1. Handrail Top Replacement.

END OF TASK

INSTALLATION

1. Align mounting holes of handrail top (Figure 1, Item 4) to handrail legs (Figure 1, Item 5).
2. Install two bolts (Figure 1, Item 3), flat washers (Figure 1, Item 2), and new locknuts (Figure 1, Item 1). Tighten.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Catwalk Intermediate Safety Cable (WP 0096).
2. Stow Handrail (WP 0007).
3. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL LEG REPLACEMENT

INITIAL SETUP:

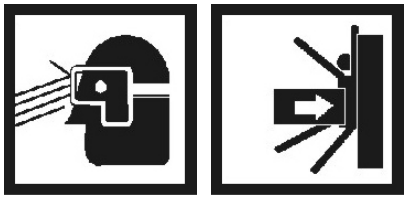
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Cotter Pin (WP 0171, Figure 17, Item 22)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Trailer Ladder Deployed (WP 0006)
Handrail Top Removed (WP 0097)
Handrail Locking Latch Bracket Removed (WP 0094)
Catwalk Kick Plate Removed (WP 0102)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Handrail Leg.

REMOVAL

NOTE

There are two handrail legs, each is removed the same way.

1. Remove cotter pin (Figure 1, Item 1) (discard cotter pin) and handrail leg washer (Figure 1, Item 2) from handrail leg (Figure 1, Item 3).
2. Slide handrail leg (Figure 1, Item 3) out from catwalk platform (Figure 1, Item 4).

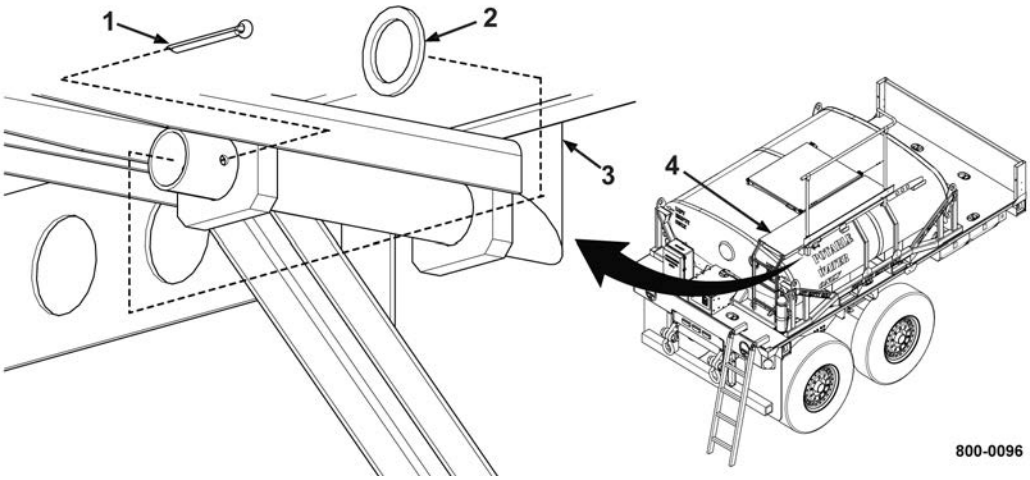


Figure 1. Handrail Leg Replacement.

END OF TASK

INSTALLATION

NOTE

There are two handrail legs, each installs the same way. The handrail leg with the mounting bracket goes on rear.

1. Slide handrail leg (Figure 1, Item 3) into catwalk platform (Figure 1, Item 4), install handrail leg washer (Figure 1, Item 2) and new cotter pin (Figure 1, Item 1).
2. Secure cotter pin (Figure 1, Item 1) by bending lower portion.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Catwalk Kick Plate (WP 0102).
2. Install Handrail Locking Latch Bracket (WP 0094).
3. Install Handrail Top (WP 0097).
4. Stow Handrail (WP 0007).

FOLLOW-ON MAINTENANCE - Continued

5. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK LADDER REPLACEMENT

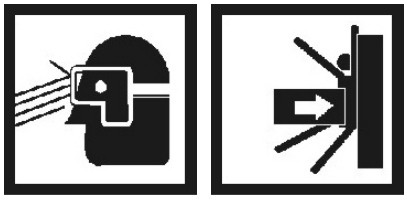
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Ladder Deployed (WP 0006)

Materials/Parts
Lock Washer Qty: 2 (WP 0171, Figure 17, Item 32)
Lock Washer Qty: 4 (WP 0172, Figure 17, Item 3)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Catwalk Ladder.

REMOVAL

1. Remove two nuts (Figure 1, Item 1), lock washers (Figure 1, Item 2) (discard lock washers), four flat washers (Figure 1, Item 3), and bolts (Figure 1, Item 4) that connect catwalk ladder (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).

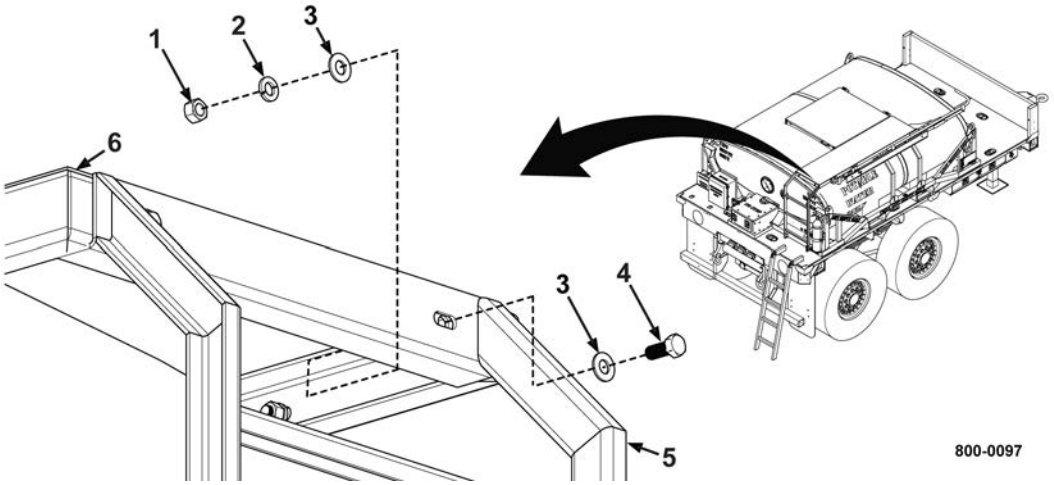


Figure 1. Ladder to Catwalk Platform Replacement.

2. Remove four nuts (Figure 2, Item 1), lock washers (Figure 2, Item 2) (discard lock washers), eight flat washers (Figure 2, Item 3), and bolts (Figure 2, Item 4) connecting catwalk ladder (Figure 2, Item 5) to water tank frame (Figure 2, Item 6).
3. Remove catwalk ladder (Figure 2, Item 5).

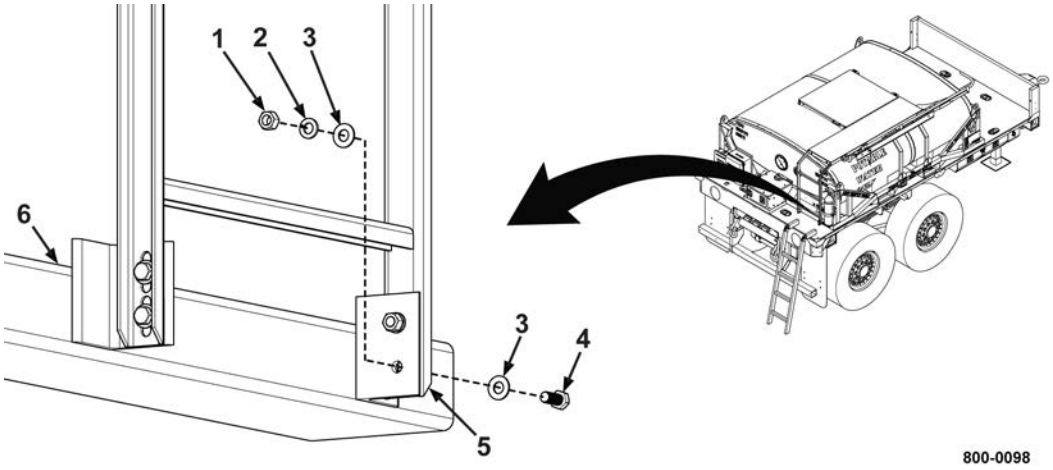


Figure 2. Ladder to Water Tank Frame Replacement.

END OF TASK

INSTALLATION

1. Install catwalk ladder (Figure 1, Item 5).
2. Align mounting holes of catwalk ladder (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).
3. Install two bolts (Figure 1, Item 4), four flat washers (Figure 1, Item 3), new lock washers (Figure 1, Item 2), and nuts (Figure 1, Item 1). Tighten firmly.
4. Align lower mounting holes of catwalk ladder (Figure 2, Item 5) to water tank frame (Figure 2, Item 6).
5. Install four bolts (Figure 2, Item 4), eight flat washers (Figure 2, Item 3), new lock washers (Figure 2, Item 2), and nuts (Figure 2, Item 1). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK SUPPORT LEG REPLACEMENT

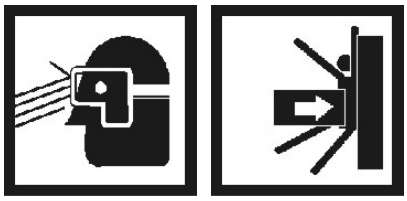
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Catwalk Assembly Removed (WP 0093)

Materials/Parts
Lock Washer Qty: 2 (WP 0171, Figure 17, Item 37)

WARNING



- Wear eye protection when working on or Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

There are two support legs, each is removed the same way.

This work package covers:

Removal and Installation of Catwalk Support Leg.

REMOVAL

Remove two nuts (Figure 1, Item 1), lock washers (Figure 1, Item 2) (discard lock washers), four flat washers (Figure 1, Item 3), and bolts (Figure 1, Item 4) that connect catwalk support leg (Figure 1, Item 5) to underside of catwalk platform (Figure 1, Item 6).

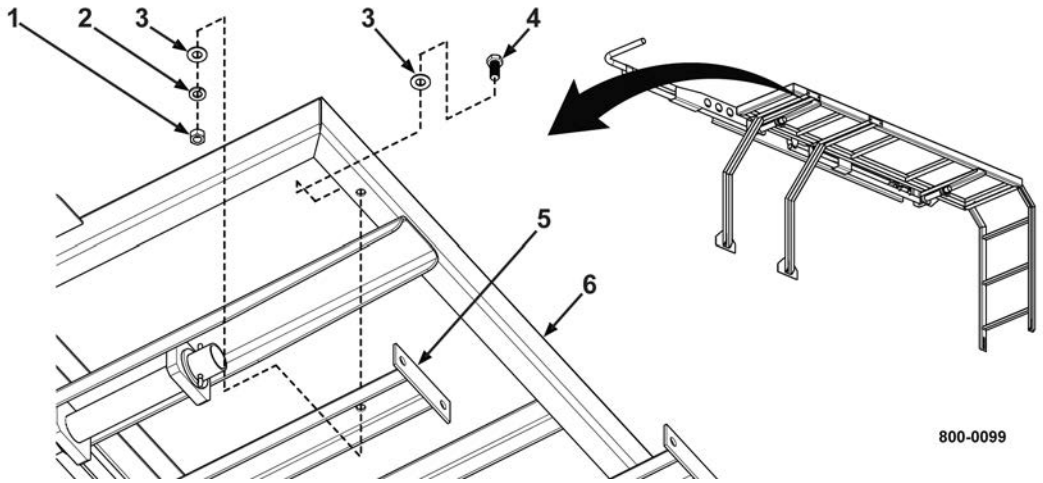


Figure 1. Catwalk Support Leg Replacement.

END OF TASK

INSTALLATION

NOTE

There are two catwalk support legs, each is installed the same way.

1. Align mounting holes of catwalk support leg (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).
2. Install two bolts (Figure 1, Item 4), four flat washers (Figure 1, Item 3), new lock washers (Figure 1, Item 2), and nuts (Figure 1, Item 1). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Catwalk Assembly (WP 0093).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL RETAINING PIN/LANYARD REPLACEMENT

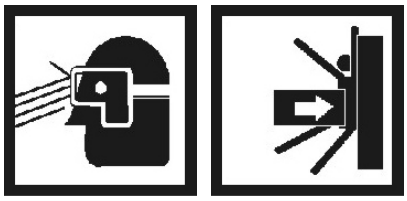
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Drill, Electric, Portable, 3/8 in. (WP 0191, Table 1, Item 3)
Drill Set, Twist, 1/16 in. to 1/2 in. (WP 0191, Table 1, Item 5)
Tool Kit, Blind, Fastener (WP 0191, Table 1, Item 11)

Materials/Parts
Rivet Aluminum, 3/16 in. DIA, 1/4 in. GRIP (WP 0171, Figure 17, Item 40)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

CAUTION

Use appropriate size drill bit when drilling out rivets. Failure to comply may result in damage to equipment.

This work package covers:

Removal and Installation of Handrail Retaining Pin/Lanyard.

REMOVAL

Remove rivet (Figure 1, Item 1) from lanyard tab (Figure 1, Item 2) on lanyard (Figure 1, Item 3) from catwalk kick plate (Figure 1, Item 4).

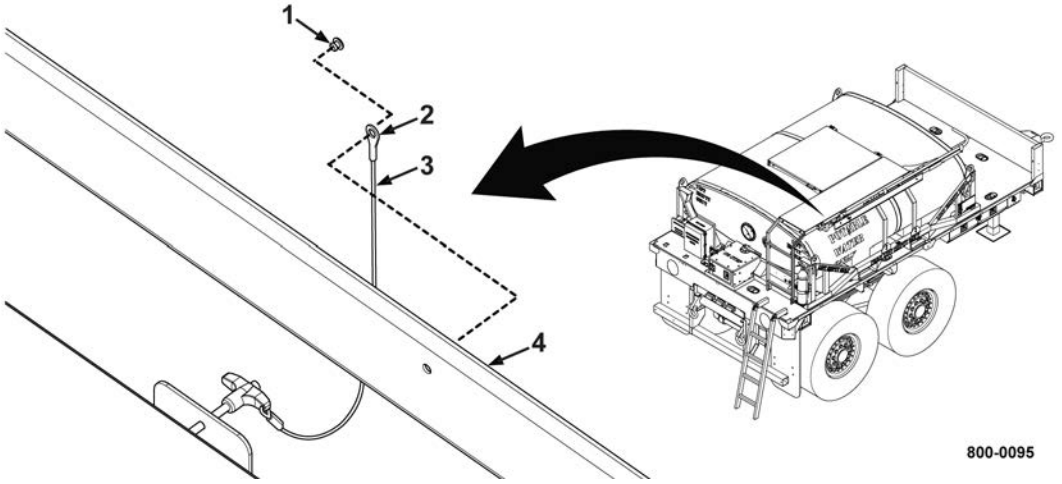


Figure 1. Handrail Retaining Pin/Lanyard Replacement.

END OF TASK

INSTALLATION

Install rivet (Figure 1, Item 1) to lanyard tab (Figure 1, Item 2) on lanyard (Figure 1, Item 3) to catwalk kick plate (Figure 1, Item 4).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK KICK PLATE REPLACEMENT

INITIAL SETUP:

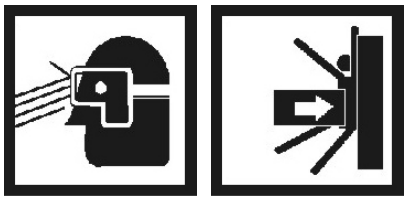
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Hexagon Qty: 2 (WP 0171, Figure 17, Item 43)

References
WP 0101

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Catwalk Kick Plate.

REMOVAL

Remove two locknuts (Figure 1, Item 3) (discard locknuts), four flat washers (Figure 1, Item 2), and two bolts (Figure 1, Item 1) from catwalk kick plate (Figure 1, Item 4). Remove catwalk kick plate from handrail legs (Figure 1, Item 5).

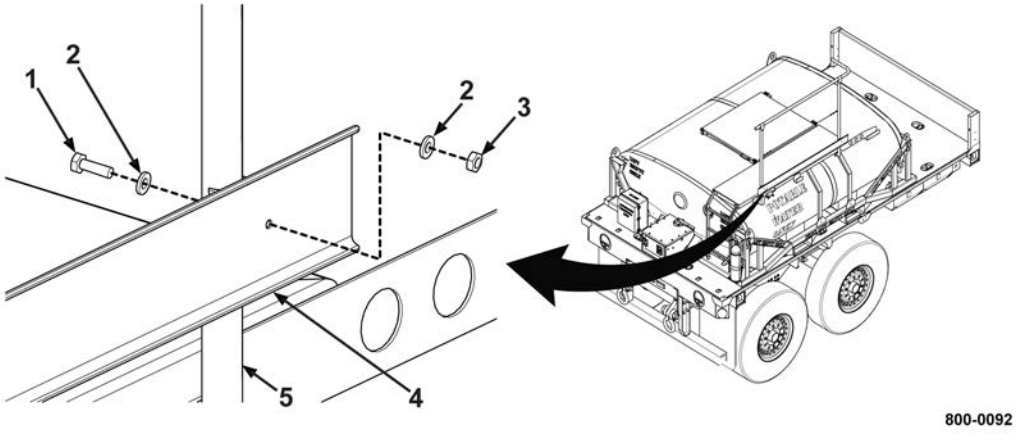


Figure 1. Catwalk Kick Plate Replacement.

END OF TASK

DISASSEMBLY

Remove Handrail Retaining Pin/Lanyard (WP 0101).

END OF TASK

ASSEMBLY

Install Handrail Retaining Pin/Lanyard (WP 0101).

END OF TASK

INSTALLATION

1. Align mounting holes of catwalk kick plate (Figure 1, Item 4) to handrail legs (Figure 1, Item 5).
2. Install two bolts (Figure 1, Item 1), four flat washers (Figure 1, Item 2), and two new locknuts (Figure 1, Item 3). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).

FOLLOW-ON MAINTENANCE - Continued

2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HANDRAIL STOWAGE BRACKET REPLACEMENT

INITIAL SETUP:

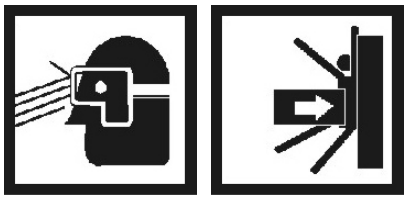
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Lock Washer Qty: 2 (WP 0171, Figure 17, Item 47)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Trailer Ladder Deployed (WP 0006)
Handrail Deployed (WP 0007)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Handrail Stowage Bracket.

REMOVAL

Remove two nuts (Figure 1, Item 1), lock washers (Figure 1, Item 2) (discard lock washers), four flat washers (Figure 1, Item 3), and two bolts (Figure 1, Item 4) that connect handrail stowage bracket (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).

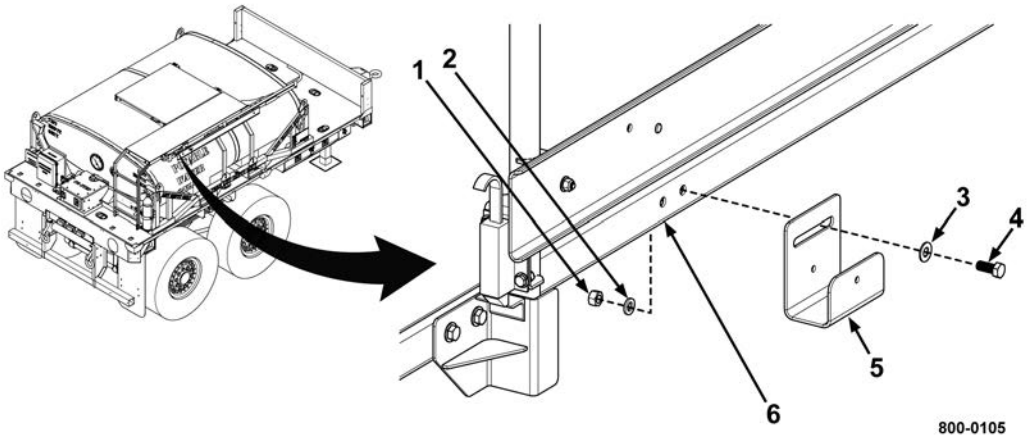


Figure 1. Handrail Stowage Bracket Replacement.

END OF TASK

INSTALLATION

Install two bolts (Figure 1, Item 4), four flat washers (Figure 1, Item 3), two new lock washers (Figure 1, Item 2), and nuts (Figure 1, Item 1) that connect handrail stowage bracket (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Handrail (WP 0007).
2. Stow Trailer Ladder (WP 0006).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CATWALK PLATFORM REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

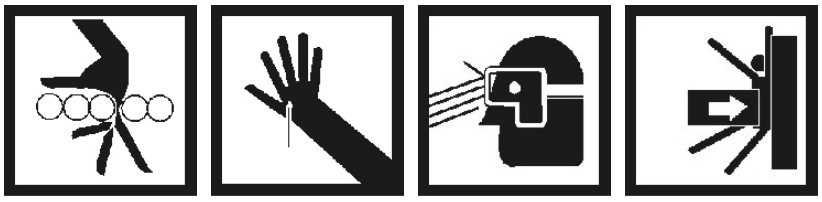
Materials/Parts
Lock Washer Qty: 6 (WP 0171, Figure 17, Item 32, 37)

Personnel Required
Two

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Catwalk Assembly Removed (WP 0093)
Trailer Ladder Deployed (WP 0006)
Handrail Leg Removed (WP 0098)
Handrail Stowage Bracket Removed (WP 0103)

WARNING



- Ensure catwalk assembly is properly supported when removing mounting bolts. Catwalk assembly may shift or fall.
- Wear proper gloves when handling and removing the catwalk assembly.
- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Catwalk Platform.

REMOVAL

1. Remove two nuts (Figure 1, Item 1), two lock washers (Figure 1, Item 2) (discard lock washers), four flat washers (Figure 1, Item 3), and two bolts (Figure 1, Item 4) connecting catwalk ladder (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).

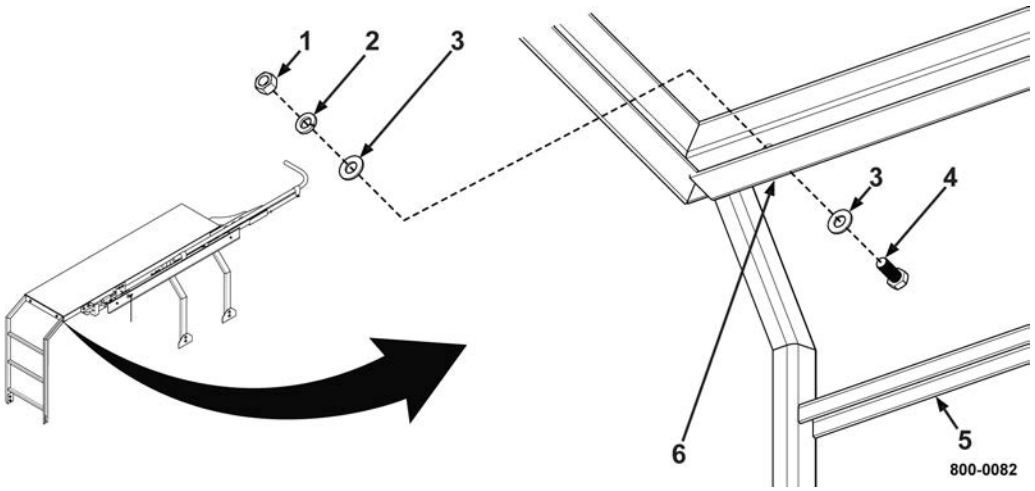


Figure 1. Catwalk Ladder Replacement.

2. Remove four nuts (Figure 2, Item 2), lock washers (Figure 2, Item 3) (discard lock washers), eight flat washers (Figure 2, Item 4), and four bolts (Figure 2, Item 5) connecting catwalk support leg (Figure 2, Item 6) to underside of catwalk platform (Figure 2, Item 1).

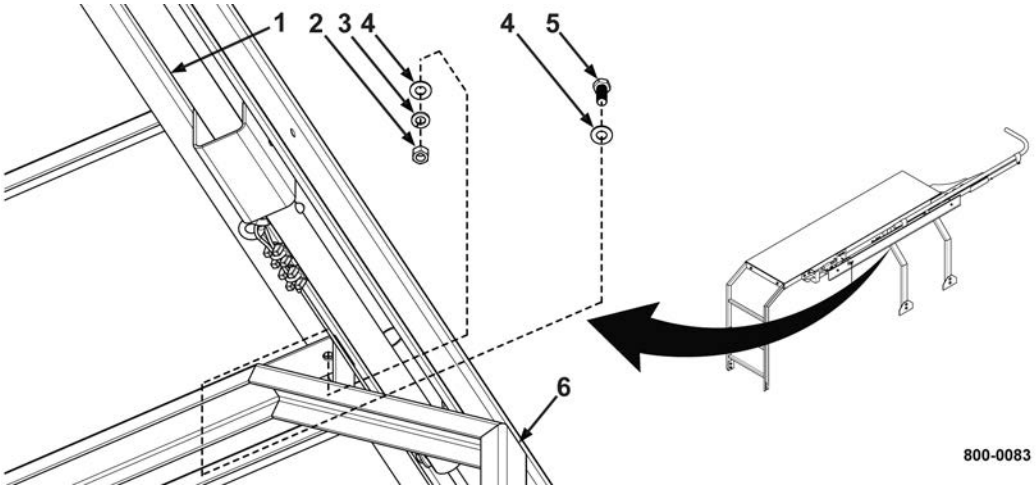


Figure 2. Catwalk Platform Replacement.

END OF TASK

INSTALLATION

1. With help of an assistant, place catwalk platform (Figure 2, Item 1) onto support legs (Figure 2, Item 6).
2. Align mounting holes of catwalk support legs (Figure 2, Item 6) to catwalk platform (Figure 2, Item 1).
3. Install four bolts (Figure 2, Item 5), eight flat washers (Figure 2, Item 4), four new lock washers (Figure 2, Item 3), and two nuts (Figure 2, Item 2). Tighten.
4. Align mounting holes of catwalk ladder (Figure 1, Item 5) to catwalk platform (Figure 1, Item 6).
5. Install two bolts (Figure 1, Item 4), four flat washers (Figure 1, Item 3), two new lock washers (Figure 1, Item 2), and two nuts (Figure 1, Item 1). Tighten.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Handrail Stowage Bracket (WP 0103).
2. Install Handrail Leg (WP 0098).
3. Stow Trailer Ladder (WP 0006).
4. Install Catwalk Assembly (WP 0093)

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX MOUNT BRACKET REPLACEMENT

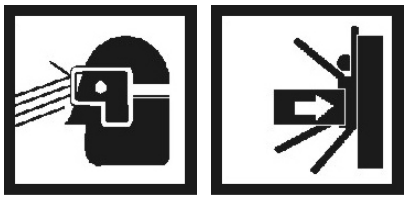
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Assembly Removed (WP 0106)

Materials/Parts
Lock Washer Qty: 4 (WP 0172, Figure 18, Item 3)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Electrical Control Box Mount Bracket.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), lock washers (Figure 1, Item 2) (discard lock washers), and flat washers (Figure 1, Item 3) that connect electrical control box mount bracket (Figure 1, Item 4) to water tank frame (Figure 1, Item 5).
2. Remove electrical control box mount bracket (Figure 1, Item 4).

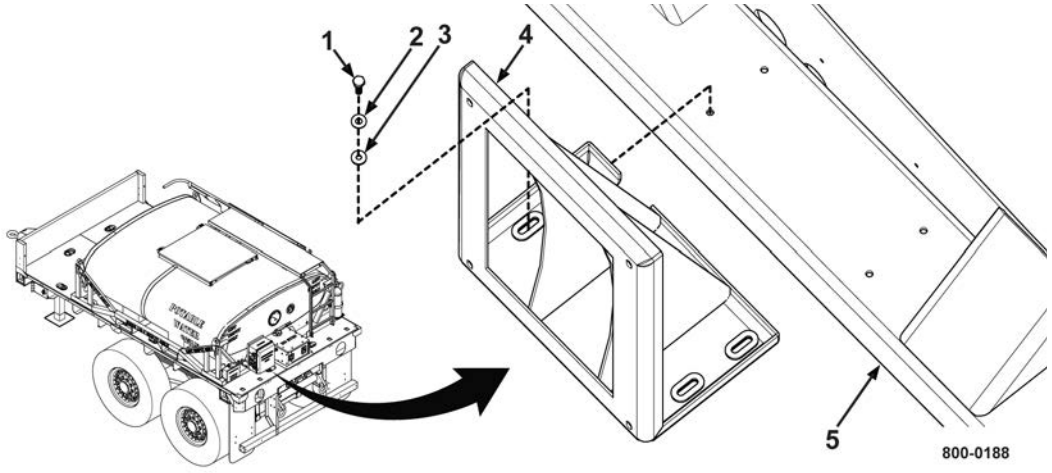


Figure 1. Electrical Control Box Mount Bracket Replacement.

END OF TASK

INSTALLATION

1. Align electrical control box mount bracket (Figure 1, Item 4) onto water tank frame (Figure 1, Item 5).
2. Install four bolts (Figure 1, Item 1), new lock washers (Figure 1, Item 2), and flat washers (Figure 1, Item 3) that connect electrical control box mount bracket (Figure 1, Item 4) to water tank frame (Figure 1, Item 5).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Assembly (WP 0106).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX ASSEMBLY REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)
Locknut, Nylon Insert Qty: 4 (WP 0172, Figure 18, Item 10)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0010

Equipment Condition
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Refer to electrical wiring diagram (FO-1), electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.
- Remove wire ties as needed.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Electrical Control Box Assembly.

REMOVAL

1. Disconnect all wires that enter in the electrical control box (Figure 1, Item 4) from the side conduit (Figure 1, Item 3).
2. Unscrew nut (Figure 1, Item 1) connecting side conduit box connector (Figure 1, Item 3) to electrical control box (Figure 1, Item 4), remove nut and metal washer (Figure 1, Item 2) over disconnected wires.

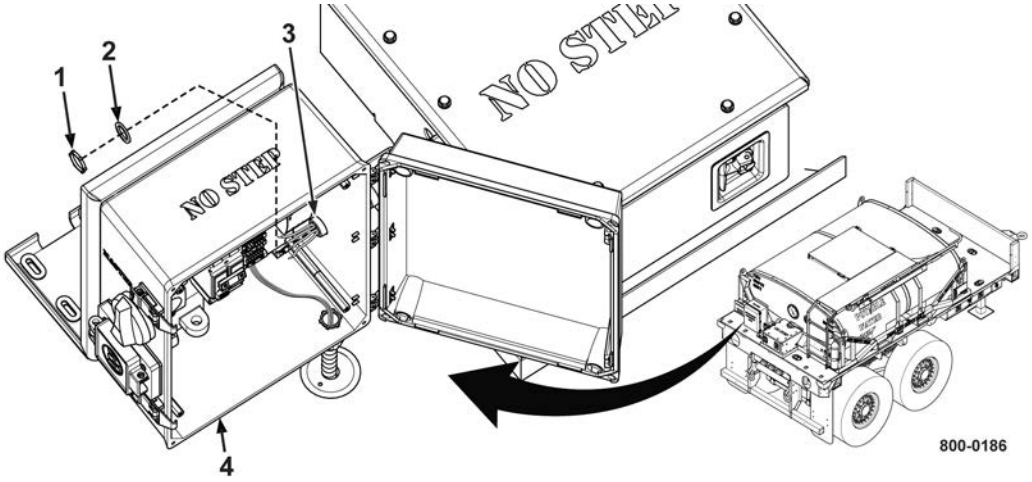


Figure 1. Box Connector Removal.

3. Locate power and ground wire (Figure 2, Item 1) where they exit lower conduit (Figure 2, Item 2) underneath trailer. Disconnect power and ground plug connectors (Figure 2, Item 3).

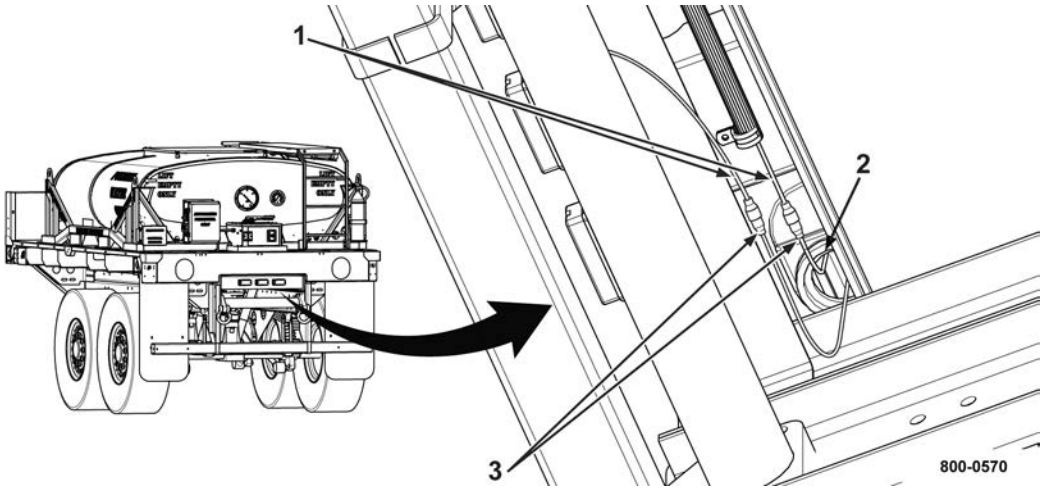


Figure 2. Plug Disconnection.

REMOVAL - Continued

NOTE

Retain ground wire connected to lower roadside mounting bolt.

4. Remove four bolts (Figure 3, Item 1), sealing washers (Figure 3, Item 2), flat washers (Figure 3, Item 3), and locknuts (Figure 3, Item 4) (discard locknuts) that connect electrical control box (Figure 3, Item 8) to electrical control box mount bracket (Figure 3, Item 5).
5. As electrical control box (Figure 3, Item 8) is being removed from electrical control box mount bracket (Figure 3, Item 5), slide side conduit (Figure 3, Item 6) and wires (Figure 3, Item 7) out of electrical control box (Figure 3, Item 8).

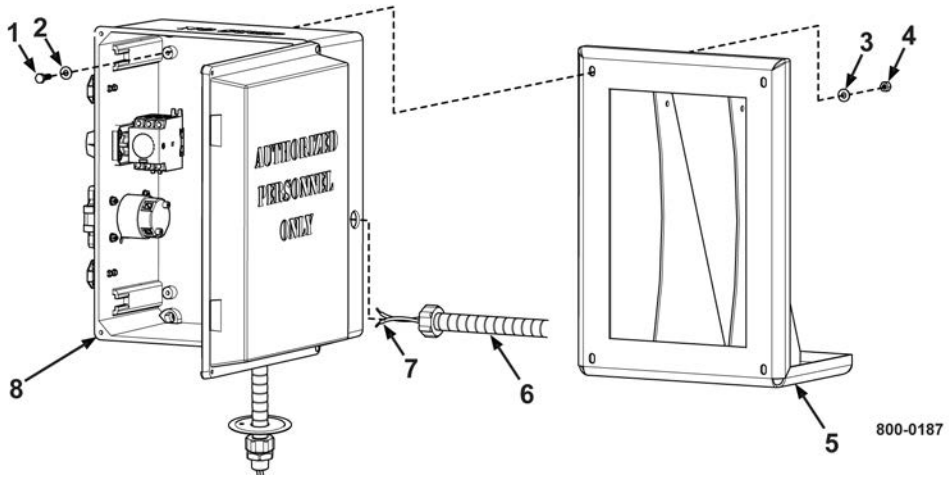


Figure 3. Electrical Control Box Assembly Replacement.

END OF TASK

DISASSEMBLY

1. Conduit, Trailer Cables, Heat trace Removed (WP 0109).
2. External Power Plug Removed (WP 0121).
3. Main Power Switch Removed (WP 0122).
4. Electrical Control Box Rear Panel Removed (WP 0128).

END OF TASK

ASSEMBLY

1. Electrical Control Box Rear Panel Installed (WP 0128).
2. Main Power Switch Installed (WP 0122).
3. External Power Plug Installed (WP 0121).
4. Conduit, Trailer Cables, Heat trace Installed (WP 0109).

END OF TASK

INSTALLATION

1. Route power and ground wire from lower conduit (Figure 4, Item 1) through opening in trailer deck (Figure 4, Item 2).

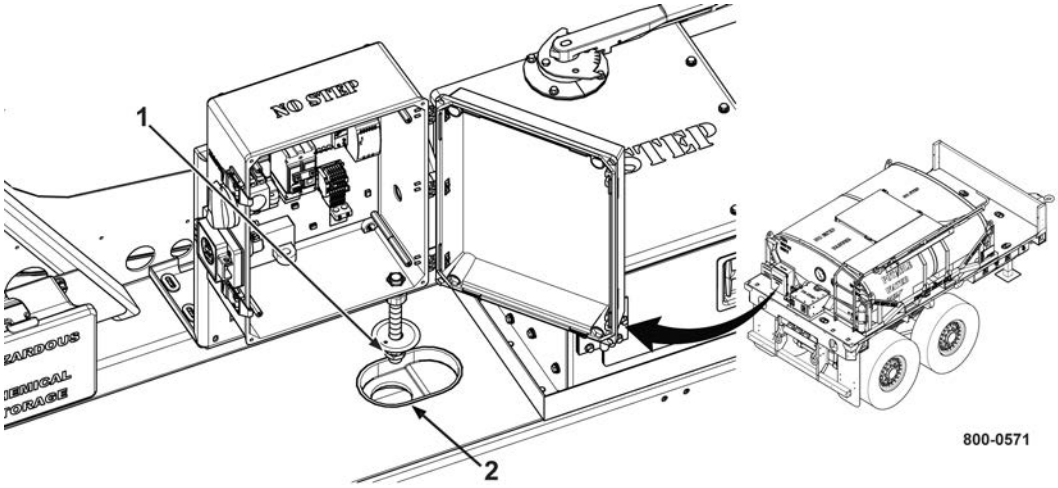


Figure 4. Power and Ground Wire Installation.

2. Route right side conduit (Figure 3, Item 6) and wires (Figure 3, Item 7) through openings on electrical control box (Figure 3, Item 8) right side.
3. Align electrical control box (Figure 3, Item 8) onto electrical control box mount bracket (Figure 3, Item 5), ensuring lower conduit is seated properly on trailer deck.

NOTE

When installing lower, left side mounting bolt, ground wire must be installed between bolt and front side of sealing washer.

4. Install four bolts (Figure 3, Item 1), sealing washers (Figure 3, Item 2), flat washers (Figure 3, Item 3), and new locknuts (Figure 3, Item 4), that connect electrical control box (Figure 3, Item 8) to electrical control box mount bracket (Figure 3, Item 5).
5. Install nut (Figure 5, Item 1) and washer (Figure 5, Item 2) over wires, onto right side box connector (Figure 5, Item 3), tighten nut.

INSTALLATION - Continued

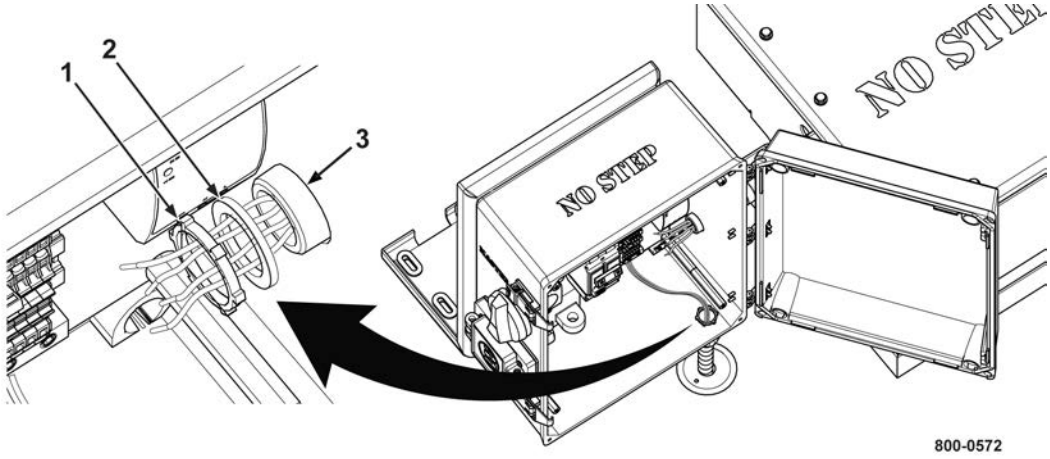


Figure 5. Right Side Box Connector Installation.

NOTE

Refer to FO-3 wiring schematic for wiring connection, locations, and routing.

6. Inside electrical control box (Figure 6, Item 1) connect heat trace black wire 1EW2 (Figure 6, Item 3) to position #4 of orange terminal block (Figure 6, Item 2).
7. Route heat trace white wire 1EW1 (Figure 6, Item 5) through DC Current sensor (Figure 6, Item 7).
8. Connect heat trace green wire 1EW3 (Figure 6, Item 4) to ground lug (Figure 6, Item 6).

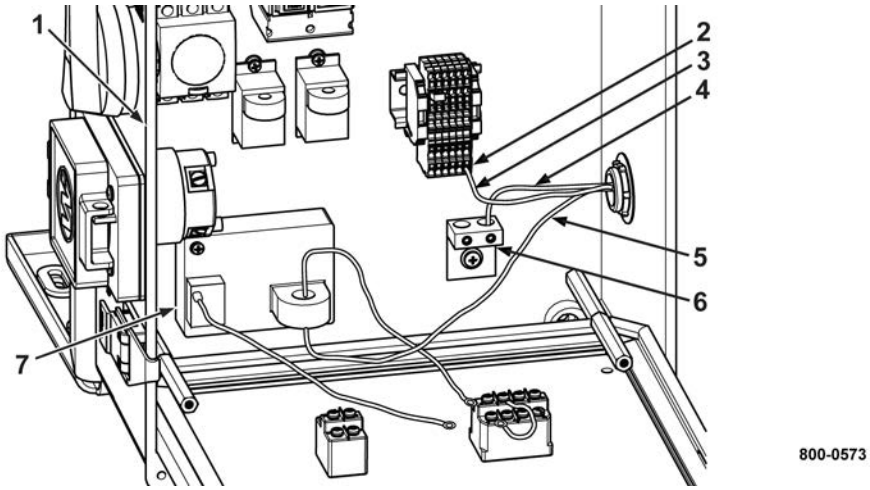


Figure 6. Wire Connection to Orange Terminal Block.

INSTALLATION - Continued

9. Connect white wire 1EW1, blue wire 1AW28, and blue wire W3 (Figure 7, Item 1) to terminal #3 (Figure 7, Item 2) of the heat trace switch (Figure 7, Item 3).
10. Connect heat blanket brown wire 1DWL1 (Figure 7, Item 6) to terminal #44 of 4 pole contactor (Figure 7, Item 5).
11. Route heat blanket blue wire 1DWL2 (Figure 7, Item 7) through the left side current sensor (Figure 7, Item 4), connect to terminal #34 of 4 pole contactor (Figure 7, Item 5).

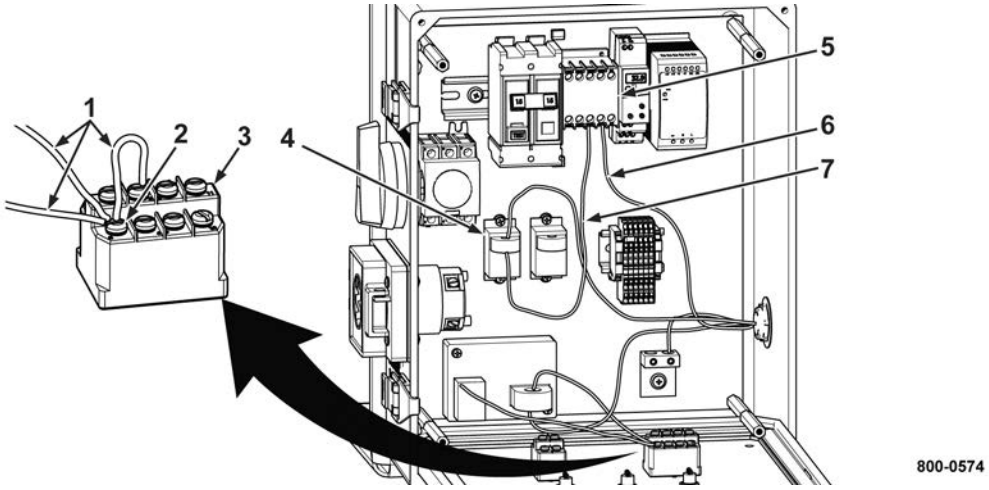


Figure 7. Wire Connection to Left Side Current Sensor.

12. Connect heat blanket green/yellow wires 1DWL3 and 1DWR3 (Figure 8, Item 6) to terminal ground lug (Figure 8, Item 7).
13. Route heat blanket blue wire 1DWR2 (Figure 8, Item 8) through the right side current sensor (Figure 8, Item 9), then connect to terminal #14 of 4 pole contactor (Figure 8, Item 1).
14. Connect heat blanket brown wire 1DWR1 (Figure 8, Item 3) to terminal #24 of 4 pole contactor (Figure 8, Item 1).
15. Connect heat blanket white sensor wire 1DW1W (Figure 8, Item 4) to terminal #5 of the heat blanket thermostat (Figure 8, Item 2).
16. Connect heat blanket red sensor wire 1DW1R (Figure 8, Item 5) to terminal #4 of the heat blanket thermostat (Figure 8, Item 2).

INSTALLATION - Continued

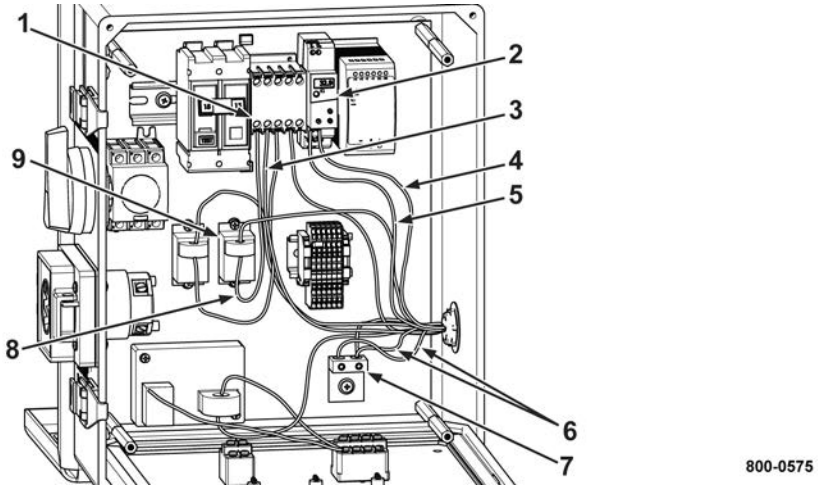


Figure 8. Wire Connection to Right Side Current Sensor.

17. Reconnect power and ground wire plug connectors (Figure 9, Item 1) underneath trailer.

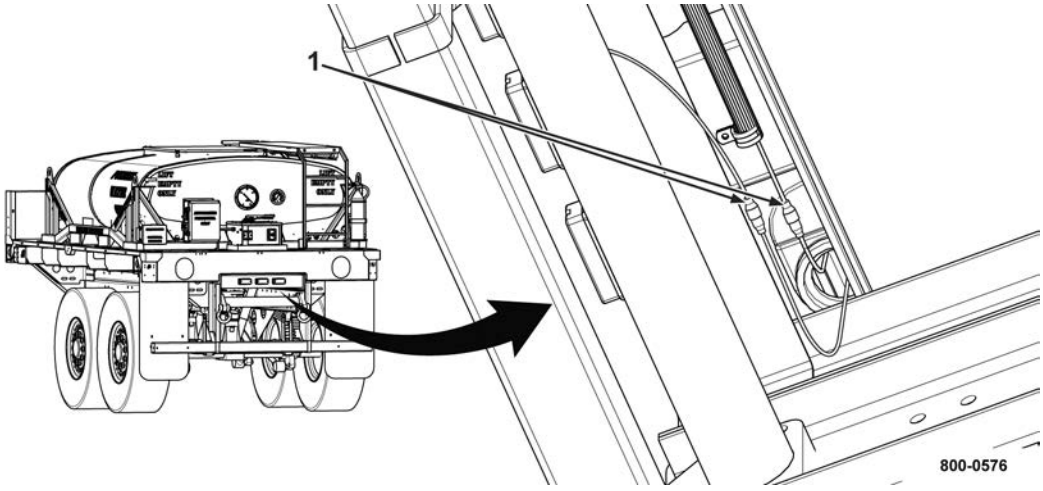


Figure 9. Plug Reconnection.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Electrical Control Box Front Panel (WP 0125).
2. Check Operation of Temperature Protection Controls (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX LATCH REPLACEMENT

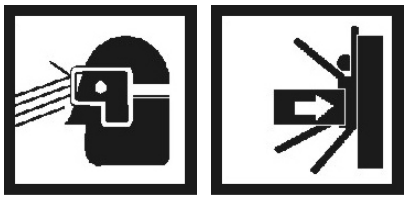
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
WP 0172, Figure 18

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Electrical Control Box Latch.

REMOVAL

Remove two bolts (Figure 1, Item 1) that connect electrical control box latch (Figure 1, Item 2) to electrical control box (Figure 1, Item 3).

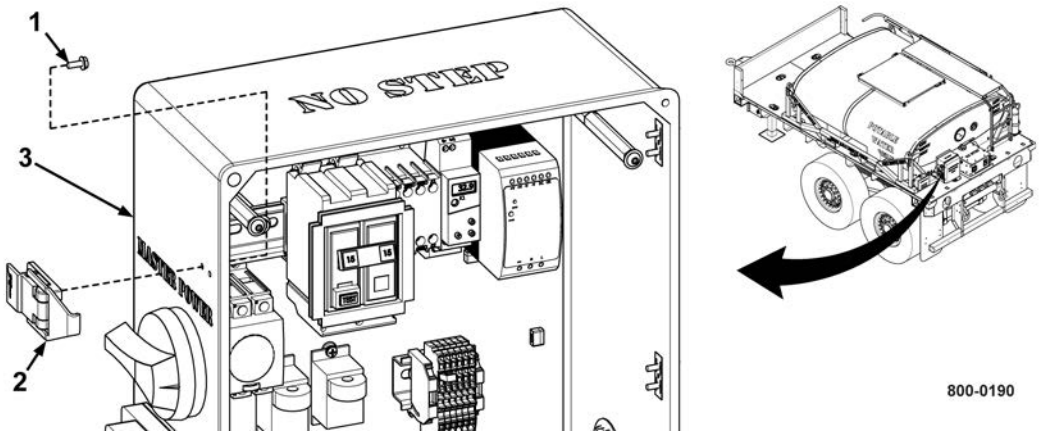


Figure 1. Electrical Control Box Latch Replacement.

END OF TASK

INSTALLATION

Install two bolts (Figure 1, Item 1) that connect electrical control box latch (Figure 1, Item 2) to electrical control box (Figure 1, Item 4).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX LID/HINGE REPLACEMENT

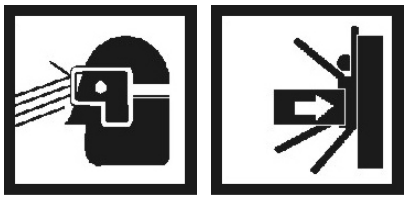
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
WP 0172, Figure 18

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- There are three hinges, each is removed and installed the same way.
- Note orientation of hinge when removed. Hinge must be installed with same orientation.

This work package covers:

Removal and Installation of Electrical Control Box Lid/Hinge.

REMOVAL

Remove four bolts (Figure 1, Item 1) and two clips (Figure 1, Item 2) from each electrical control box hinge (Figure 1, Item 3) connecting electrical control box lid (Figure 1, Item 4) to electrical control box (Figure 1, Item 5).

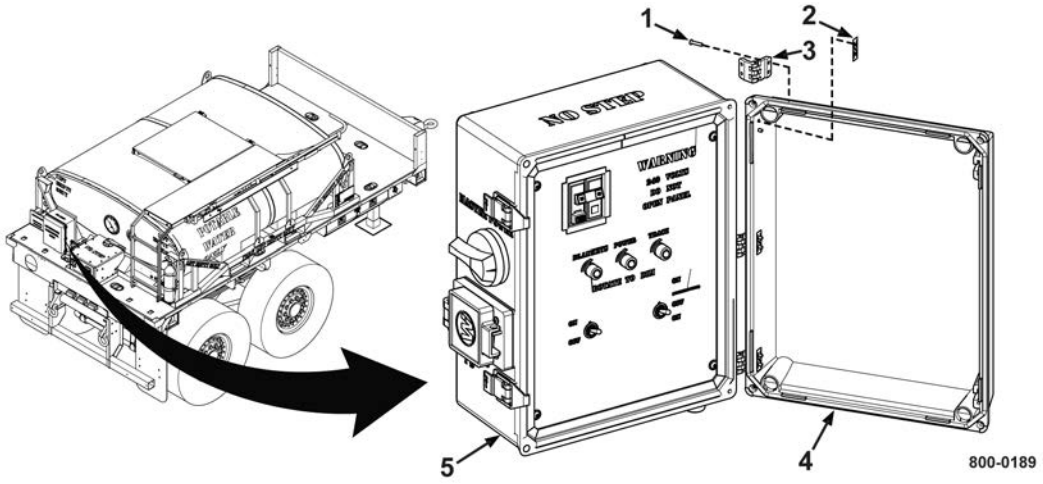


Figure 1. Electrical Control Box Lid/Hinge Replacement.

END OF TASK

INSTALLATION

Install four bolts (Figure 1, Item 1) and two clips (Figure 1, Item 2) to each electrical control box hinge (Figure 1, Item 3) connecting electrical control box lid (Figure 1, Item 4) to electrical control box (Figure 1, Item 5).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CONDUIT, TRAILER CABLES, HEAT TRACE REPLACEMENT

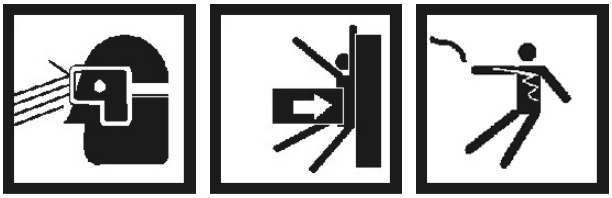
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Assembly Removed (WP 0106)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1), electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Trace Conduit.

REMOVAL

1. Disconnect wire 2AW1 (Figure 1, Item 3) from heat trace switch terminal #4 (Figure 1, Item 4) on electrical control box front panel (Figure 1, Item 5).
2. Disconnect wire 2AW2 (Figure 1, Item 2) from ground terminal lug (Figure 1, Item 1) on electrical control box rear panel (Figure 1, Item 5).

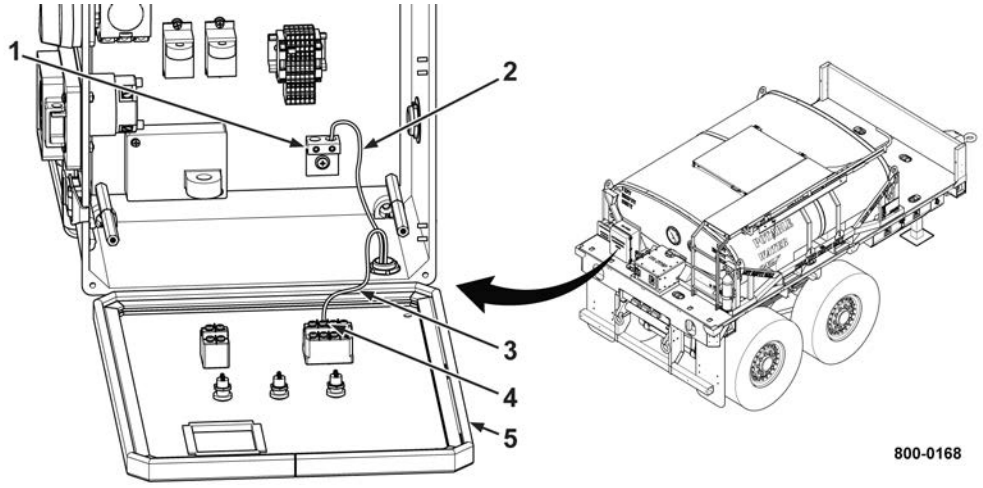


Figure 1. Heat Trace Power/Ground Disconnection.

3. Slowly pull each wire through the heat trace conduit assembly (Figure 2, Item 1) from bottom of conduit.
4. Remove nut (Figure 2, Item 3) and washer (Figure 2, Item 4) from heat trace conduit (Figure 2, Item 1).
5. Remove heat trace conduit assembly (Figure 2, Item 1) from electrical control box (Figure 2, Item 2).

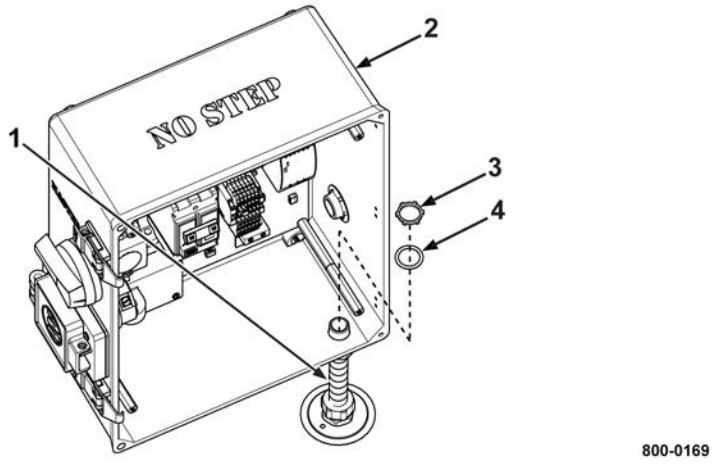


Figure 2. Heat Trace Conduit Removal.

END OF TASK

INSTALLATION

1. Install box connector (Figure 2, Item 5) through bottom of electrical control box (Figure 2, Item 2).
2. Install nut (Figure 2, Item 3) and washer (Figure 2, Item 4) that secures heat trace conduit (Figure 2, Item 1) to electrical control box (Figure 2, Item 2).
3. Route power and ground wires (Figure 3, Item 1) through heat trace conduit (Figure 3, Item 2) from the bottom.

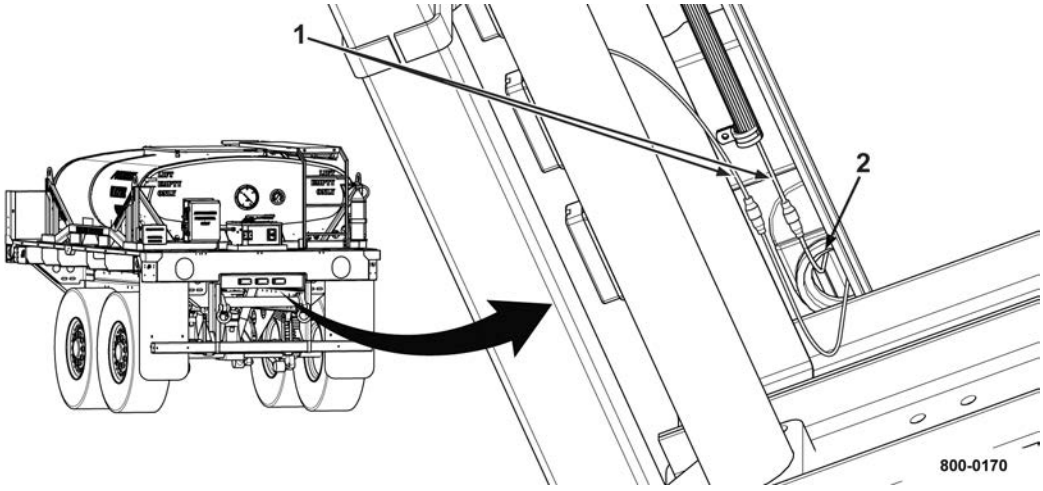


Figure 3. Power and Ground Wire Routing.

4. Re-connect wire 2AW1 (Figure 4, Item 3) heat trace switch terminal #4 (Figure 4, Item 4) on electrical control box front panel (Figure 4, Item 5).
5. Re-connect wire 2AW2 (Figure 4, Item 2) to ground terminal lug (Figure 4, Item 1).

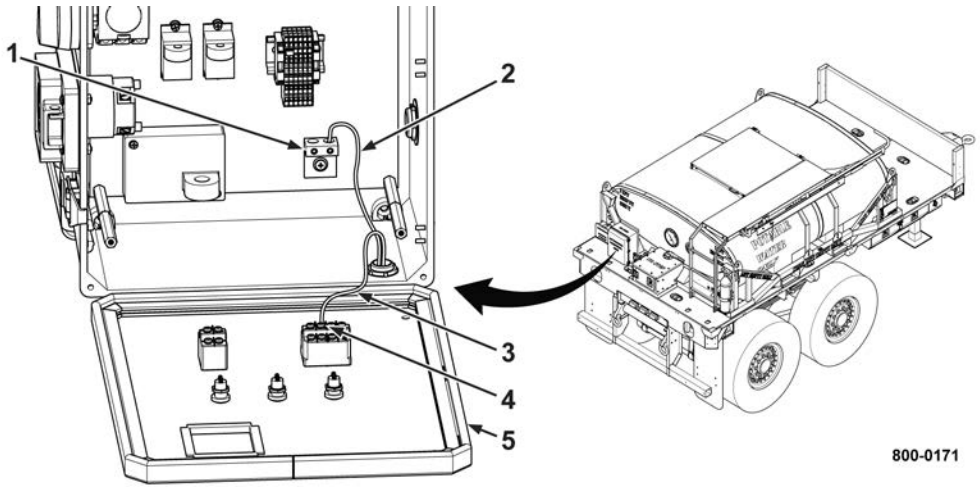


Figure 4. Heat Trace Power Wire Reconnection.

END OF TASK

FOLLOW-ON MAINTENANCE

Electrical Control Box Assembly Installed (WP 0106).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CONDUIT, OUTLET HEATER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Box Front Panel Removed (WP 0125)
Discharge Box Lid Removed (WP 0145)
Discharge Box Wool Insulation Removed (WP 0135)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Conduit, Outlet Heater.

REMOVAL

NOTE

Remove wire ties as needed.

1. Disconnect all wires coming from conduit, outlet heater (Figure 1, Item 1) into electrical control box (Figure 1, Item 2).
2. Slowly pull wires through the outlet heater conduit (Figure 1, Item 1) from inside the discharge box assembly (Figure 1, Item 3).
3. Remove nut (Figure 1, Item 5) and washer (Figure 1, Item 4) from box connector (Figure 1, Item 6) inside electrical control box (Figure 1, Item 2).

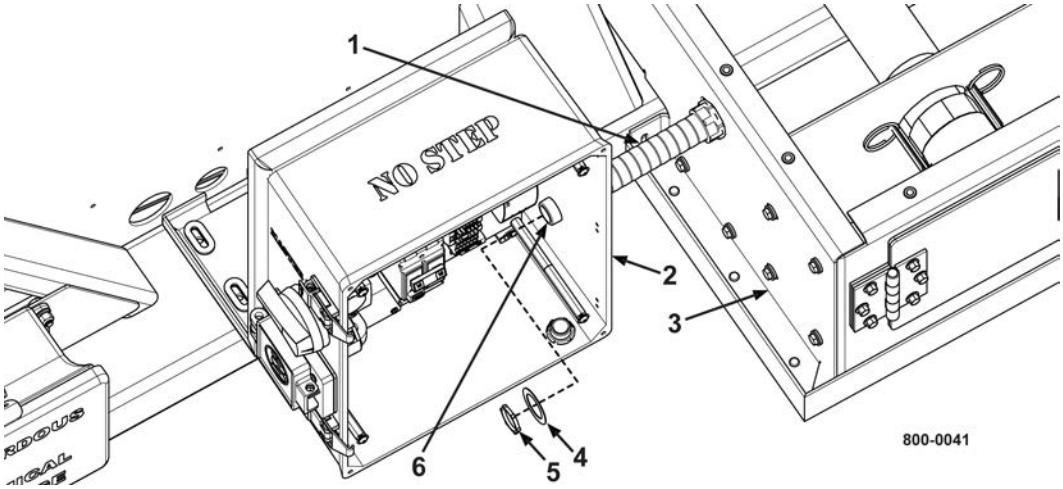


Figure 1. Outlet Heater Conduit to Electrical Control Box Disconnection and Reconnection.

4. Remove nut (Figure 2, Item 1) from box connector (Figure 2, Item 2) inside discharge box assembly (Figure 2, Item 3).

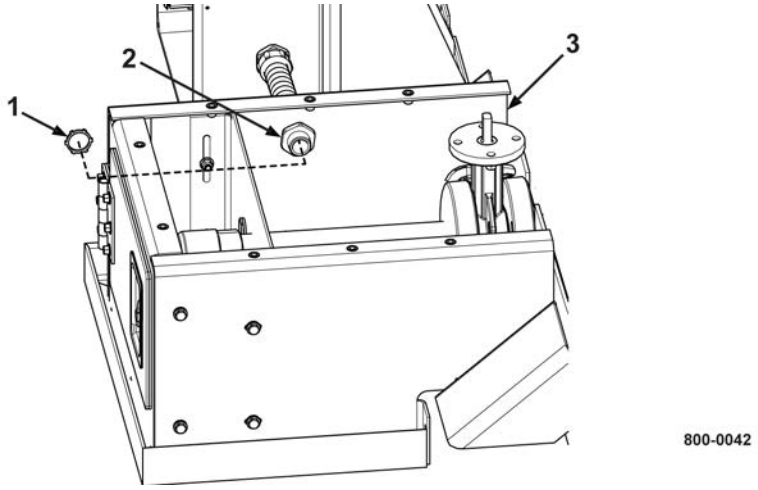


Figure 2. Outlet Heater Conduit to Discharge Box Assembly Disconnection and Reconnection.

REMOVAL - Continued

5. Remove outlet heater conduit (Figure 3, Item 1) from discharge box assembly (Figure 3, Item 2) and electrical control box (Figure 3, Item 3).

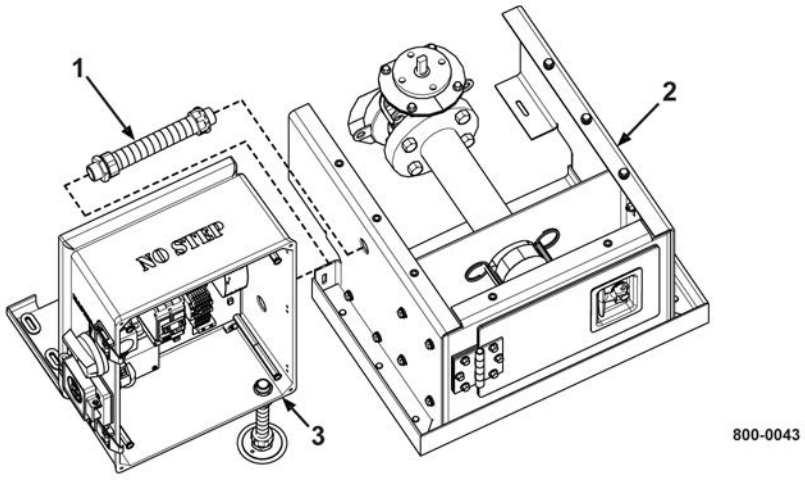


Figure 3. Outlet Heater Conduit Replacement.

END OF TASK

INSTALLATION

1. Install outlet heater conduit (Figure 3, Item 1) through side of discharge box assembly (Figure 3, Item 2) and electrical control box (Figure 3, Item 3).
2. Install nut (Figure 2, Item 1) onto box connector (Figure 2, Item 2) to discharge box assembly (Figure 2, Item 3).
3. Install nut (Figure 1, Item 5) and washer (Figure 1, Item 4) onto box connector (Figure 1, Item 6) to secure outlet heater conduit (Figure 1, Item 1) to electrical control box (Figure 1, Item 2).
4. Route all wire ends from inside discharge box assembly (Figure 1, Item 3) through outlet heater conduit (Figure 1, Item 1) to inside electrical control box (Figure 1, Item 2).

INSTALLATION - Continued

NOTE

Refer to FO-3 wiring schematic for wiring connection, locations, and routing.

5. Inside electrical control box (Figure 4, Item 1) connect heat trace black wire 1EW2 (Figure 4, Item 3) to position #4 of orange terminal block (Figure 4, Item 2).
6. Route heat trace white wire 1EW1 (Figure 4, Item 5) through DC Current sensor (Figure 4, Item 7).
7. Connect heat trace green wire 1EW3 (Figure 4, Item 4) to ground lug (Figure 4, Item 6).

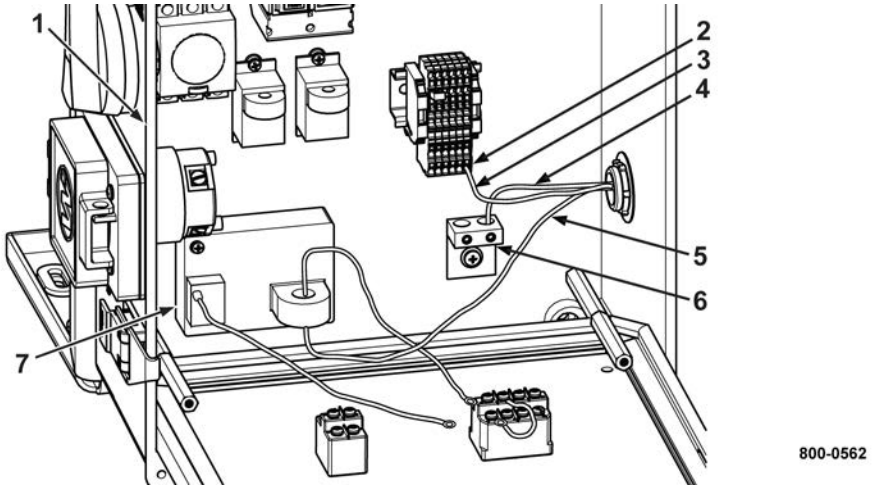


Figure 4. Wire Connection to Orange Terminal Block.

8. Connect white wire 1EW1, blue wire 1AW28, and blue wire W3 (Figure 5, Item 1) to terminal #3 (Figure 5, Item 2) of the heat trace switch (Figure 5, Item 3).
9. Connect heat blanket brown wire 1DWL1 (Figure 5, Item 6) to terminal #44 of 4 pole contactor (Figure 5, Item 5).
10. Route heat blanket blue wire 1DWL2 (Figure 5, Item 7) through the left side current sensor (Figure 5, Item 4), connect to terminal #34 of 4 pole contactor (Figure 5, Item 5).

INSTALLATION - Continued

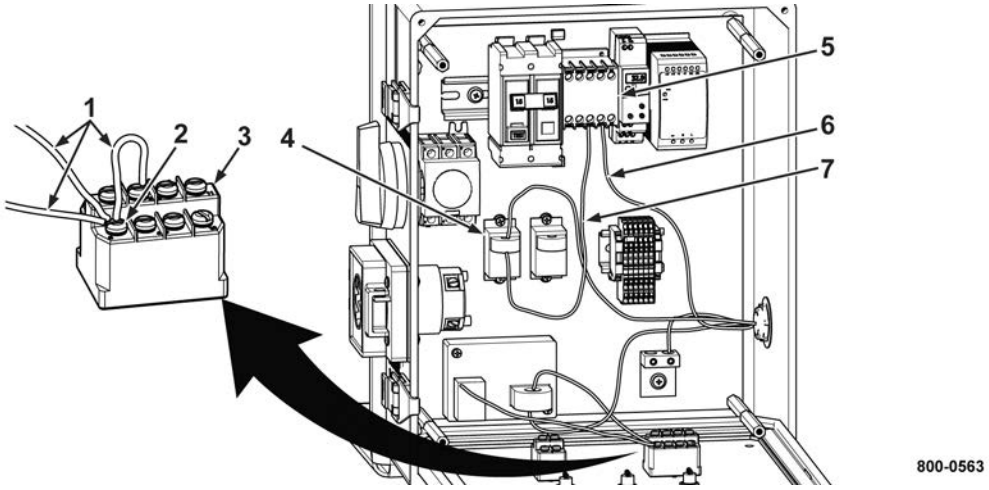


Figure 5. Wire Connection to Roadside Current Sensor.

11. Connect heat blanket green/yellow wires 1DWL3 and 1DWR3 (Figure 6, Item 6) to terminal ground lug (Figure 6, Item 7).
12. Route heat blanket blue wire 1DWR2 (Figure 6, Item 8) through the right side current sensor (Figure 6, Item 9), then connect to terminal #14 of 4 pole contactor (Figure 6, Item 1).
13. Connect heat blanket brown wire 1DWR1 (Figure 6, Item 3) to terminal #24 of 4 pole contactor (Figure 6, Item 1).
14. Connect heat blanket white sensor wire 1DW1W (Figure 6, Item 4) to terminal #5 of the heat blanket thermostat (Figure 6, Item 2).
15. Connect heat blanket red sensor wire 1DW1R (Figure 6, Item 5) to terminal #4 of the heat blanket thermostat (Figure 6, Item 2).

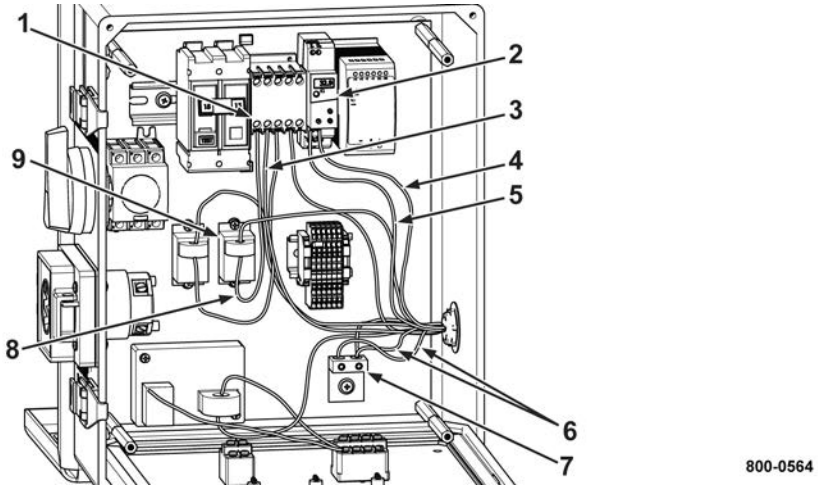


Figure 6. Wire Connection to Curbside Current Sensor.

INSTALLATION - Continued

END OF TASK

FOLLOW-ON MAINTENANCE

1. Verify heat blanket and heat trace operate correctly (WP 0010).
2. Secure all excess wires as needed.
3. Install Discharge Box Wool Insulation (WP 0135).
4. Install Discharge Box Lid (WP 0145).
5. Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT BLANKET CURRENT SENSOR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting.
- There are two heat blanket current sensors. Replace both sensors at same time.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Blanket Current Sensor.

REMOVAL

1. Cut wire ties as needed.
2. Disconnect two blue wires 1DWL2 and 1DWR2 (Figure 1, Item 1) that route through the current sensors (Figure 1, Item 2) at the 4 pole contactor (Figure 1, Item 3).
3. Remove two blue wires 1DWL2 and 1DWR2 (Figure 1, Item 1) from the heat blanket current sensors (Figure 1, Item 2).
4. Disconnect the orange input wire 1AW10 (Figure 1, Item 4) that leads to the heat blanket current sensor (Figure 1, Item 2).
5. Disconnect the output wire 1AW22 (Figure 1, Item 5) leading from the heat blanket current sensor (Figure 1, Item 2).

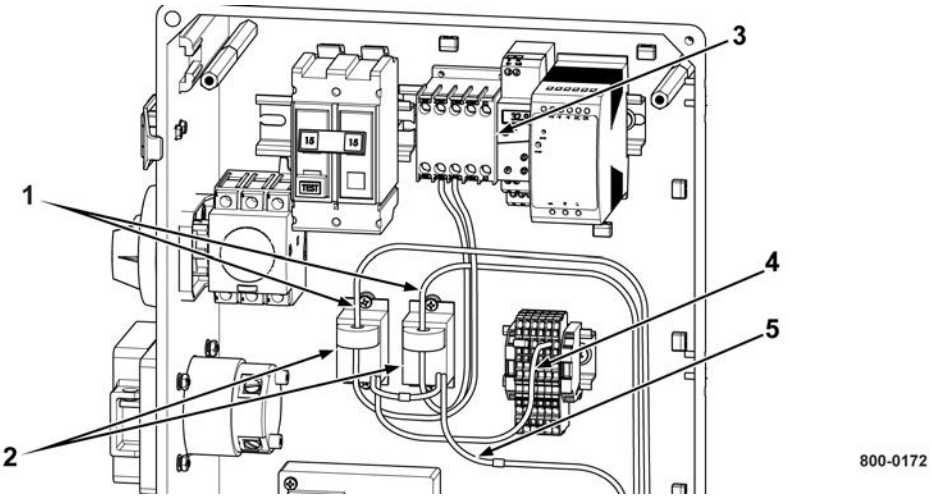


Figure 1. Wire Disconnection and Connection.

6. Remove four pan head screws (Figure 2, Item 1) that secure heat blanket current sensors (Figure 2, Item 2) to electrical control box rear panel (Figure 2, Item 3).

REMOVAL - Continued

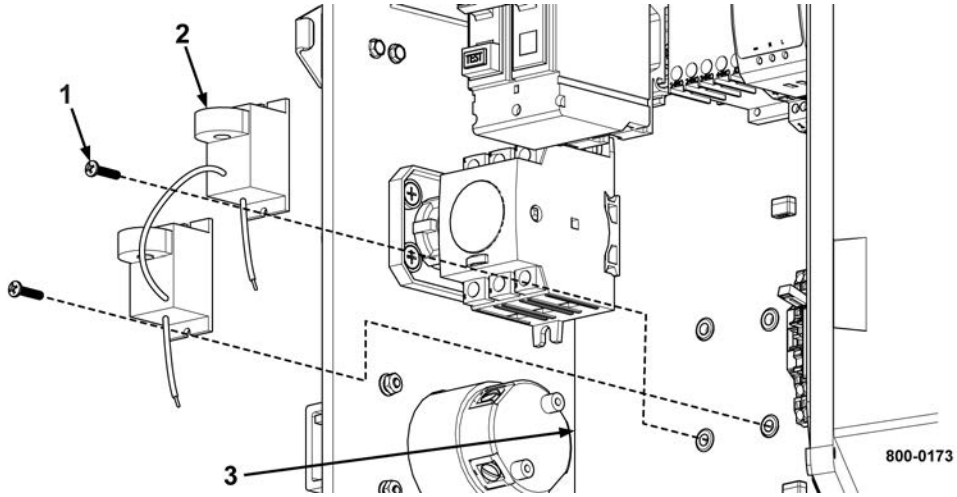


Figure 2. Heat Blanket Current Sensor Replacement.

END OF TASK

INSTALLATION

1. Install four pan head screws (Figure 2, Item 1) to secure heat blanket current sensors (Figure 2, Item 2) to electrical control box rear panel (Figure 2, Item 3).
2. Route blue wires 1DWL2 and 1DWR2 (Figure 1, Item 1) through the heat trace current sensors (Figure 1, Item 2) and reconnect to 4 pole contactor (Figure 1, Item 3).
3. Reconnect orange input wire 1AW10 (Figure 1, Item 4) of the heat blanket current sensor (Figure 1, Item 2), refer to wiring schematic FO-3 as needed.
4. Reconnect blue output wire 1AW22 (Figure 1, Item 5) of the heat blanket current sensor (Figure 1, Item 2), refer to wiring schematic FO-3 as needed.
5. Install wire ties as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT TRACE CURRENT SENSOR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Trace Current Sensor.

REMOVAL

1. Cut wire ties as needed.
2. Disconnect white wire 1EW1 (Figure 1, Item 1) from pin #3 (Figure 1, Item 2) of the heat trace toggle switch (Figure 1, Item 3).

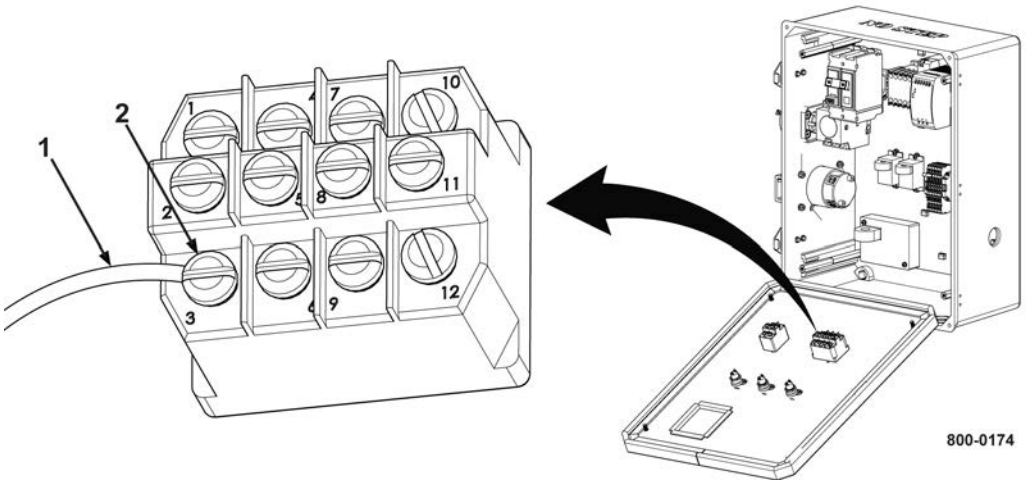


Figure 1. Wire 1EW1 Disconnect and Connect.

3. Disconnect four wires (Figure 2, Item 1) from the heat trace current sensor (Figure 2, Item 2).
4. Remove white wire 1EW1 (Figure 2, Item 3) from the heat trace current sensor (Figure 2, Item 2).

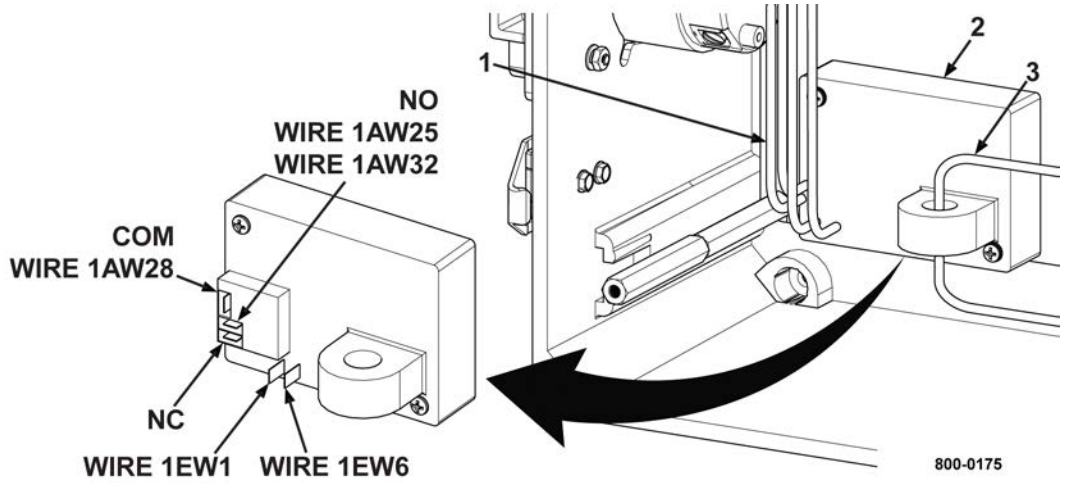


Figure 2. Heat Trace Current Sensor Wire Replacement.

REMOVAL - Continued

5. Remove two pan head screws (Figure 3, Item 1) that secure heat trace current sensor (Figure 3, Item 2) to electrical control box rear panel (Figure 3, Item 3).

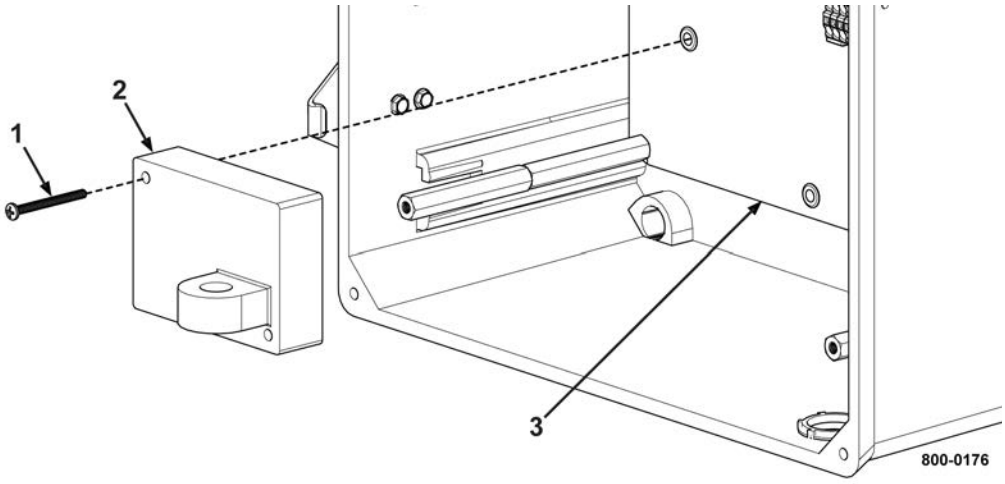


Figure 3. Heat Trace Current Sensor Replacement.

END OF TASK

INSTALLATION

1. Install two pan head screws (Figure 3, Item 1) to secure heat trace current sensor (Figure 3, Item 2) to electrical control box rear panel (Figure 3, Item 3).
2. Route white wire 1EW1 (Figure 2, Item 3) through the heat trace current sensor (Figure 2, Item 2).
3. Reconnect four wires (Figure 2, Item 1) to the heat trace current sensor (Figure 2, Item 2), refer to electrical wiring schematic (FO-3) as needed.
4. Reconnect white wire 1EW1 (Figure 1, Item 1) to pin #3 (Figure 1, Item 2) of the heat trace toggle switch (Figure 1, Item 3).
5. Install wire ties as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Inter-vehicular Harness Disconnected (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting. Remove wire ties as needed.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Ground Fault Circuit Interrupter (GFCI) Circuit Breaker.

REMOVAL

1. Disconnect all wires connected to GFCI circuit breaker (Figure 1, Item 1).
2. Remove GFCI circuit breaker (Figure 1, Item 1) from din rail clips (Figure 1, Item 2).
3. Disconnect white wire connected to main power switch (Figure 1, Item 3) from GFCI (Figure 1, Item 1).

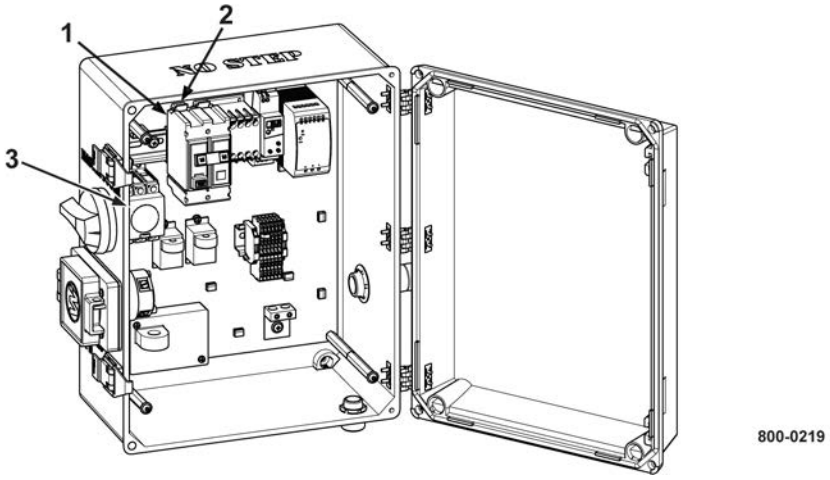


Figure 1. GFCI Circuit Breaker Replacement.

END OF TASK

INSTALLATION

NOTE

Install wire ties as needed.

1. Connect white wire to main power switch (Figure 1, Item 3) from GFCI (Figure 1, Item 1).
2. Place GFCI circuit breaker (Figure 1, Item 1) onto din rail clips (Figure 1, Item 2).
3. Reconnect wiring to proper terminals as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Test GFCI Circuit Breaker (WP 0053).
2. Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
4 POLE CONTACTOR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting. Remove wire ties as needed.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of 4 Pole Contactor.

REMOVAL

1. Disconnect all wires connected to 4 pole contactor (Figure 1, Item 1).
2. Pull din rail clip (Figure 1, Item 2) down, then rotate 4 pole contactor (Figure 1, Item 1) up and off of electrical control box rear panel din rail (Figure 1, Item 3).

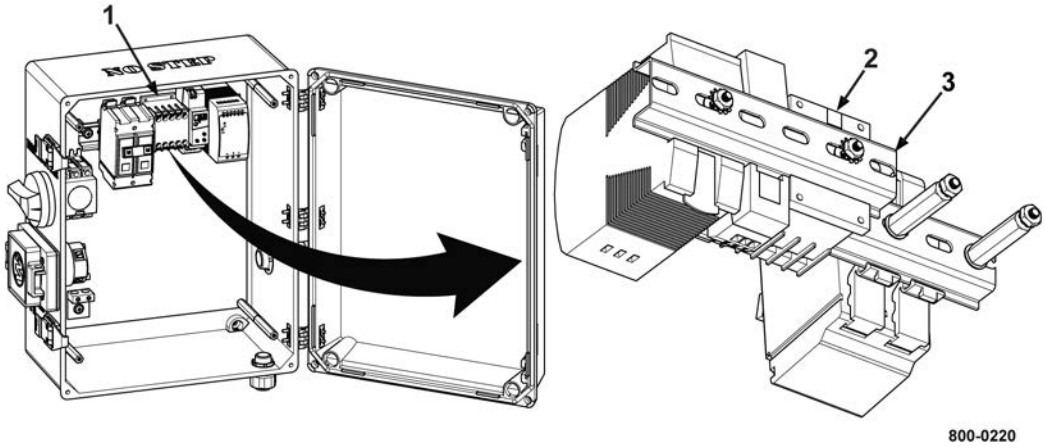


Figure 1. 4 Pole Contactor Replacement.

END OF TASK

INSTALLATION

NOTE

Install wire ties as needed.

1. Place 4 pole contactor (Figure 1, Item 1) onto electrical control box rear panel din rail (Figure 1, Item 3).
2. Push din rail clip (Figure 1, Item 2) to UP position to lock 4 pole contactor (Figure 1, Item 1) in place.
3. Reconnect wiring to proper terminals as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT BLANKET THERMOSTAT REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting. Remove wire ties as needed.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Blanket Thermostat.

REMOVAL

1. Disconnect all wires connected to heat blanket thermostat (Figure 1, Item 1).
2. Pull din rail clip (Figure 1, Item 2) down, then rotate heat blanket thermostat (Figure 1, Item 1) up and off of din rail (Figure 1, Item 3).

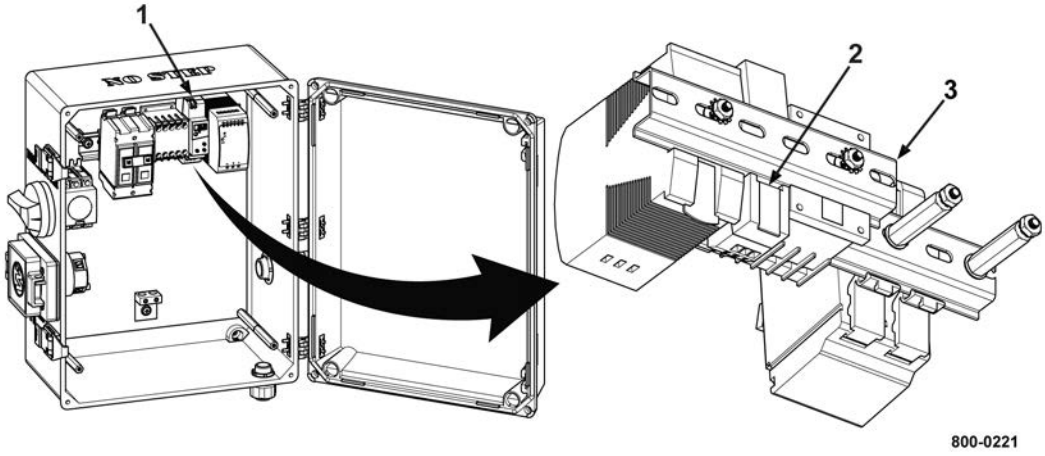


Figure 1. Heat Blanket Thermostat Replacement.

END OF TASK

INSTALLATION

NOTE

Install wire ties as needed.

1. Place heat blanket thermostat (Figure 1, Item 1) onto din rail (Figure 1, Item 3).
2. Push din rail clip (Figure 1, Item 2) to UP position to lock heat blanket thermostat (Figure 1, Item 1) in place.
3. Reconnect wiring to proper terminals as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT BLANKET THERMOSTAT ADJUSTMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
WP 0172, Figure 18

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, use extreme caution when working on electrical components.
- Remove jewelry or other loose metal items before servicing electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Heat blanket thermostat is set at 45°F (7.22°C) at manufacturer.

This work package covers:

Adjustment of Heat Blanket Thermostat.

ADJUSTMENT

1. Turn main power switch (Figure 1, Item 1) ON.
2. Current sensor temperature will appear in the thermostat window (Figure 1, Item 2).
3. Press the (P) button (Figure 1, Item 3).
4. Set point (SP) will begin to flash in the heat blanket thermostat window (Figure 1, Item 2).
5. Use the up and down arrows (Figure 1, Item 4) to set desired temperature.
6. Press the (P) (Figure 1, Item 3) button twice, heat blanket thermostat will return to normal operation with new setting.

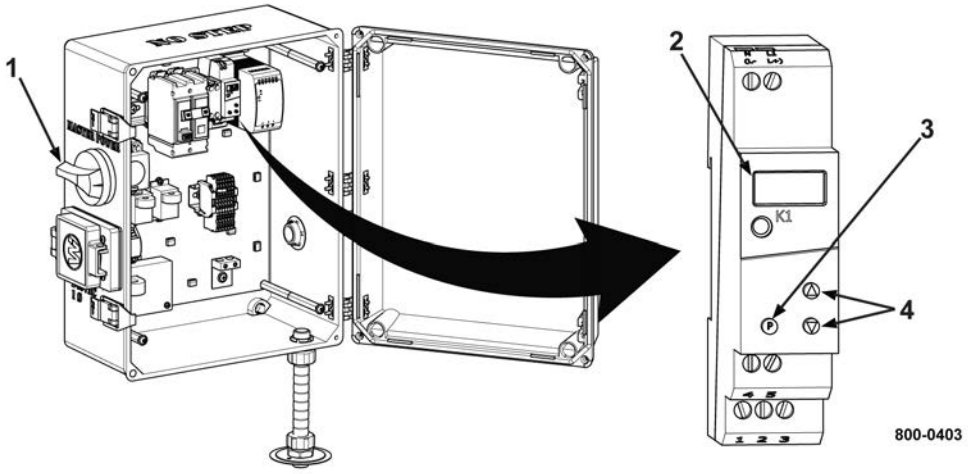


Figure 1. Heat Blanket Thermostat Adjustment.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
12 VDC POWER SUPPLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting. Remove wire ties as needed.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of 12 VDC Power Supply.

REMOVAL

1. Disconnect all wires connected to 12 VDC power supply (Figure 1, Item 1).
2. Pull din rail clip (Figure 1, Item 2) down, then rotate 12 VDC power supply (Figure 1, Item 1) up and off of din rail (Figure 1, Item 3).

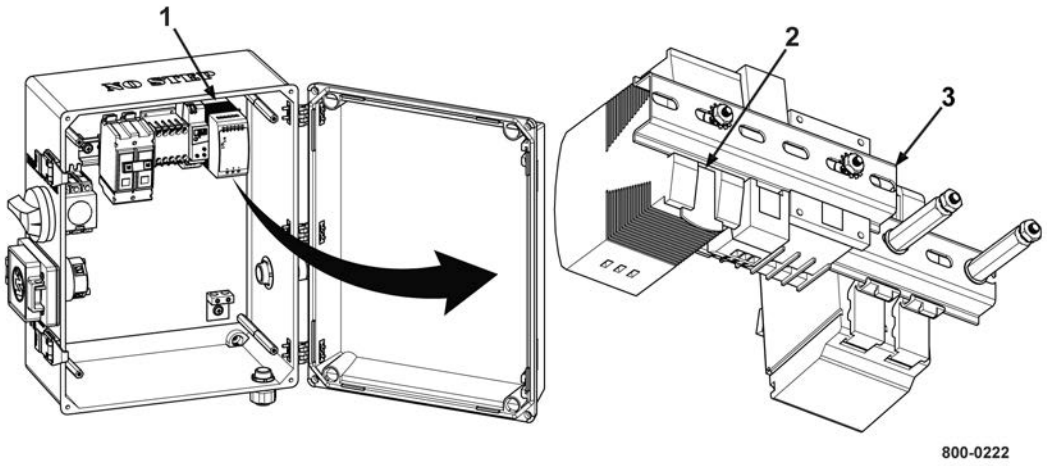


Figure 1. 12 VDC Power Supply Replacement.

END OF TASK

INSTALLATION

NOTE

Install wire ties as needed.

1. Place 12 VDC power supply (Figure 1, Item 1) onto din rail (Figure 1, Item 3).
2. Push din rail clip (Figure 1, Item 2) to UP position to lock 12 VDC power supply (Figure 1, Item 1) in place.
3. Reconnect wiring to proper terminals as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TERMINAL BLOCK REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are properly marked before disconnecting.
- There are six terminal blocks, each is removed and replaced the same way.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Terminal Blocks.

REMOVAL

1. Cut wire ties as needed.
2. Place a small flat tip screwdriver into the opening (Figure 1, Item 1) next to wire (Figure 1, Item 2) that is being removed.
3. Push screwdriver into opening (Figure 1, Item 1) until wire (Figure 1, Item 2) comes free.
4. Remove all wires in the terminal block (Figure 1, Item 3) to be removed.

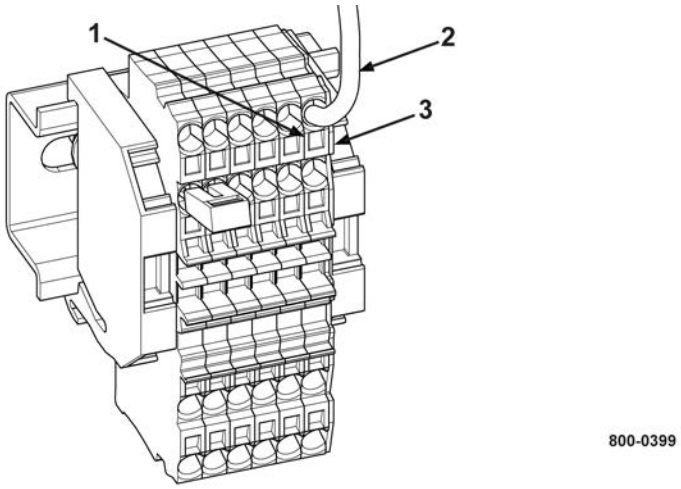


Figure 1. Wire Removal.

5. Remove din rail end stop (Figure 2, Item 1) by pressing down on clip (Figure 2, Item 2).
6. Remove terminal block (Figure 2, Item 3) by pressing down on clip (Figure 2, Item 4).

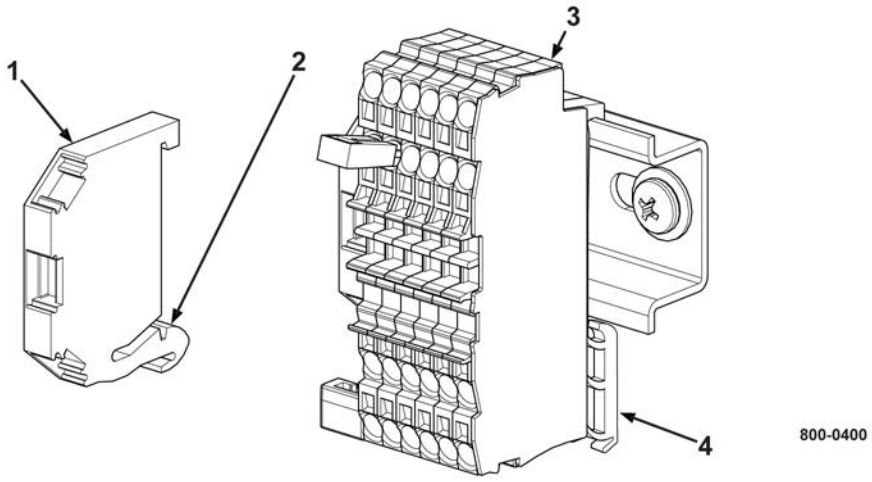


Figure 2. Terminal Block Removal.

7. If the orange terminal block (Figure 3, Item 1) is replaced, remove the end cover (Figure 3, Item 2), and install onto new orange terminal block (Figure 3, Item 1).

REMOVAL - Continued

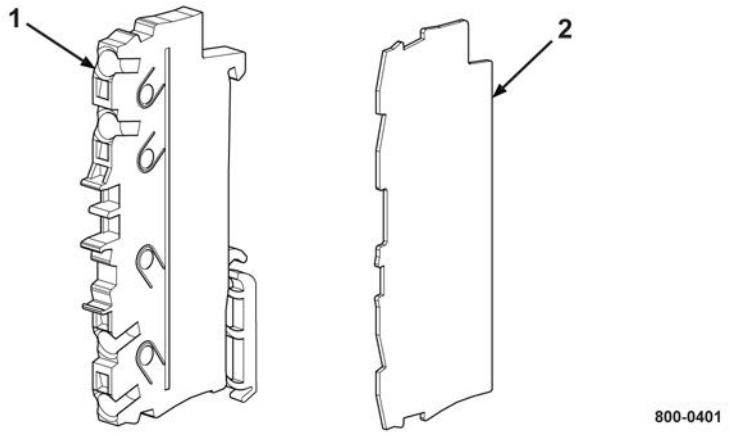


Figure 3. End Cover Replacement.

END OF TASK

INSTALLATION

NOTE

End stop will not slide on din rail when installed. Ensure terminal blocks are tight against each other before installing end stop.

1. Snap terminal block (Figure 4, Item 1) onto din rail (Figure 4, Item 2).
2. Install end stop (Figure 4, Item 3) onto din rail (Figure 4, Item 2).

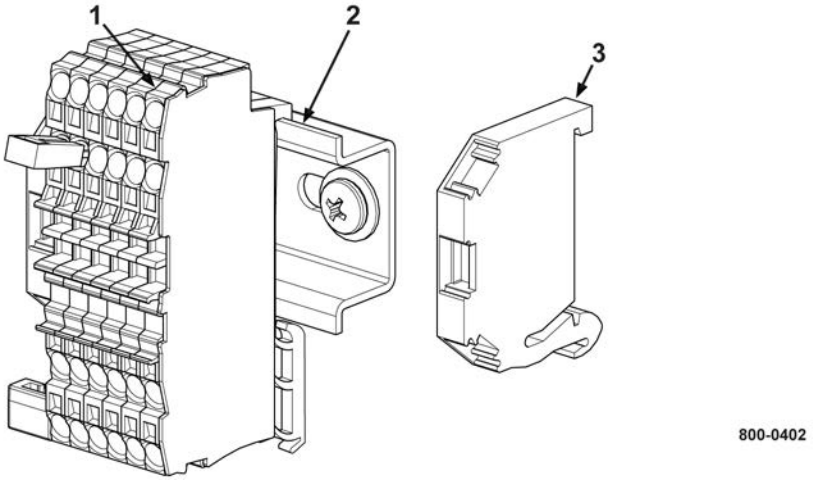


Figure 4. Terminal Block Installation.

3. Place a small flat tip screwdriver into the opening (Figure 1, Item 1) next to wire (Figure 1, Item 2) that is being installed.
4. Push screwdriver into opening then push wire into terminal block (Figure 1, Item 3).

INSTALLATION - Continued

5. Remove screwdriver, pull on wire to ensure it was seated tightly.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
JUMPER, TERMINAL BLOCK REPLACEMENT

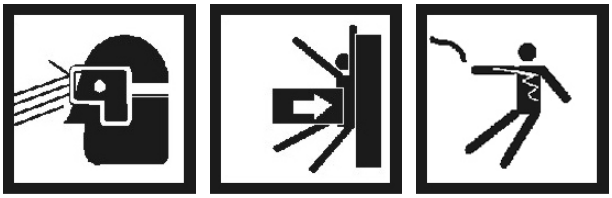
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

Materials/Parts
Jumper, Terminal, 4.2 mm (WP 0172, Figure 18, Item 47)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Front Panel Removed (WP 0125)

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Jumper, Terminal Block.

REMOVAL

NOTE

Mark position of terminal block jumper prior to removing.

1. Place two small flat tip screwdrivers in openings in terminal block (Figure 1, Item 1) just below the terminal block jumper (Figure 1, Item 2).
2. Depress two screwdrivers into terminal block openings and remove terminal block jumper (Figure 1, Item 2).

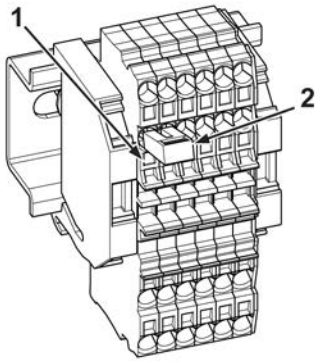


Figure 1. Terminal Block Jumper Replacement.

END OF TASK

INSTALLATION

1. Place terminal block jumper (Figure 1, Item 2) into proper position of terminal block (Figure 1, Item 1).
2. Push firmly on terminal block jumper (Figure 1, Item 2) ensuring it seats into terminal block (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TERMINAL GROUND LUG REPLACEMENT

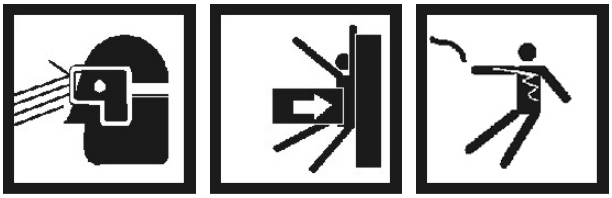
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

WARNING



- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Ensure all wires are marked before disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Terminal Ground Lug.

REMOVAL

1. Loosen two wire terminal screws (Figure 1, Item 1), then remove all ground wires from terminal ground lug (Figure 1, Item 2).
2. Remove pan head screw (Figure 1, Item 3) and flat washer (Figure 1, Item 4) that secure terminal ground lug (Figure 1, Item 2) to rear panel.

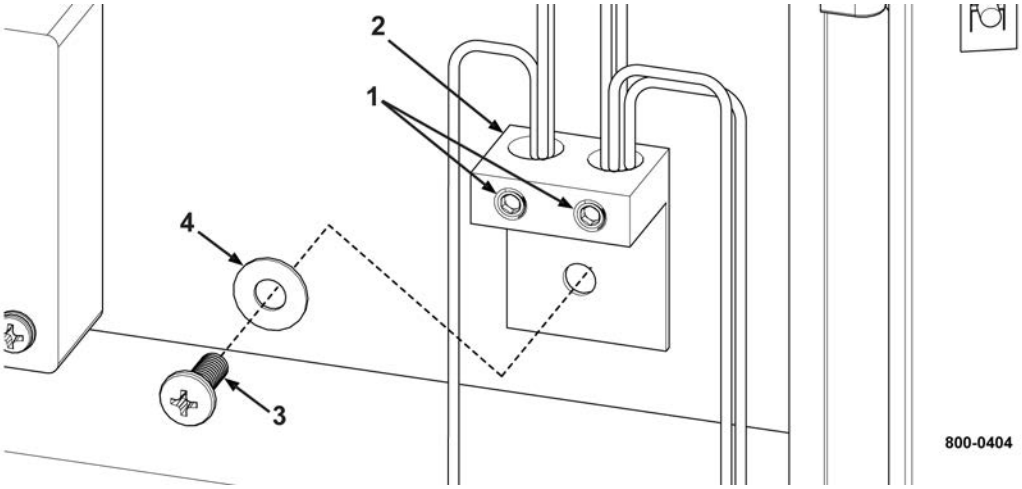


Figure 1. Terminal Ground Lug Replacement.

END OF TASK

INSTALLATION

1. Install pan head screw (Figure 1, Item 3) and flat washer (Figure 1, Item 4) that secure terminal ground lug (Figure 1, Item 2) to rear panel.
2. Install all ground wires to terminal ground lug (Figure 1, Item 2).
3. Tighten two wire terminal screws (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
EXTERNAL POWER PLUG REPLACEMENT

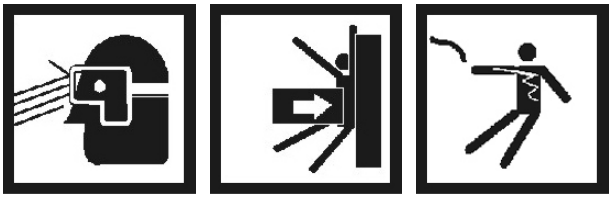
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of External Power Plug.

REMOVAL

NOTE

Ensure all wires are properly marked before disconnecting.

1. Remove four bolts (Figure 1, Item 2), lock washers (Figure 1, Item 4), flat washers (Figure 1, Item 3), and nuts (Figure 1, Item 5).
2. Disconnect five electrical wires connected to the external power plug (Figure 1, Item 1).
3. Remove external power plug (Figure 1, Item 1) from electrical control box (Figure 1, Item 6).

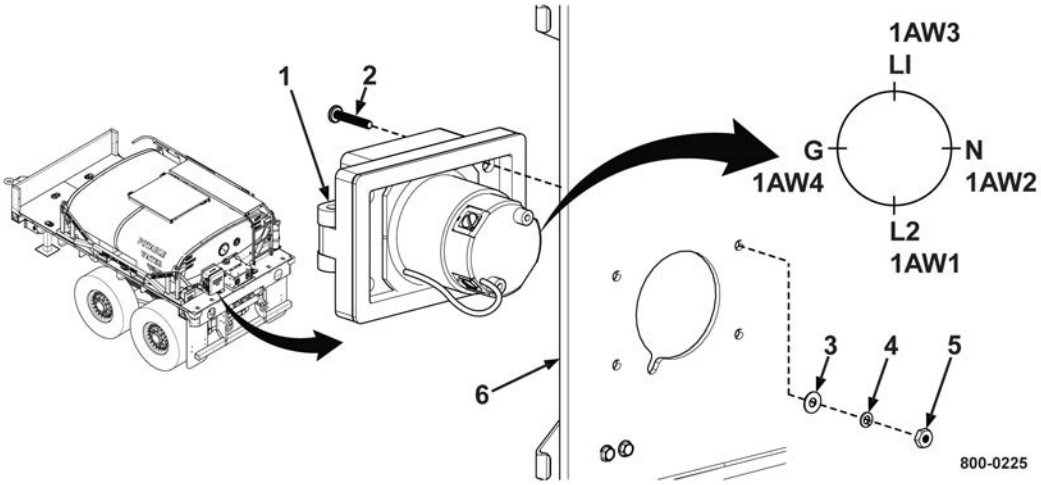


Figure 1. External Power Plug Replacement.

END OF TASK

INSTALLATION

1. Reconnect five electrical wires connected to external power plug (Figure 1, Item 1).
2. Install external power plug (Figure 1, Item 1) into electrical control box (Figure 1, Item 6).
3. Install four bolts (Figure 1, Item 2), lock washers (Figure 1, Item 4) flat washers (Figure 1, Item 3), and nuts (Figure 1, Item 5).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MAIN POWER SWITCH REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)

References (cont.)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Wires to Ground Fault Circuit Interrupter (GFCI) circuit breaker do not have to be disconnected to remove main power switch.
- Ensure all wires are properly marked prior to disconnecting.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Main Power Switch.

REMOVAL

1. Disconnect electrical wires connected to main power switch (Figure 1, Item 3).
2. Remove GFCI circuit breaker (Figure 1, Item 1) from din rail clips (figure 1, Item 2).

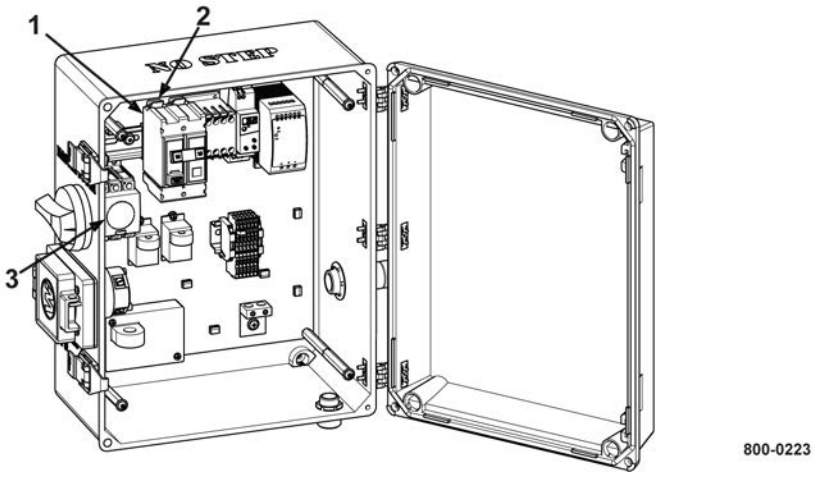


Figure 1. GFCI Circuit Breaker Replacement.

3. Pull din rail clip (Figure 2, Item 2) down, then slide main power switch (Figure 2, Item 1) off of mounting bracket (Figure 2, Item 3).
4. Remove pin (Figure 2, Item 4) from mounting bracket (Figure 2, Item 3).
5. Remove main power switch handle (Figure 2, Item 5) from electrical control box (Figure 2, Item 6) by removing nut (Figure 2, Item 7) and four screws (Figure 2, Item 8) from mounting bracket (Figure 2, Item 3).

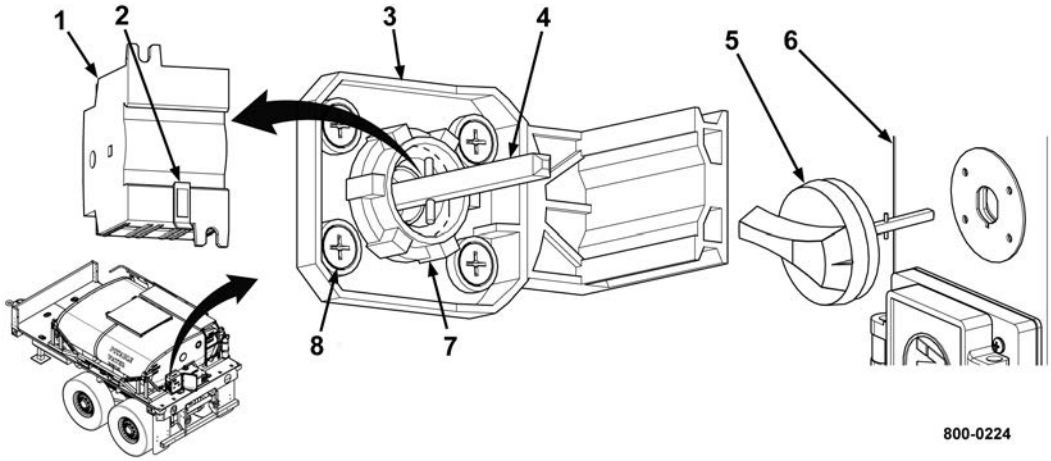


Figure 2. Main Power Switch Replacement.

END OF TASK

INSTALLATION

NOTE

Install wire ties as needed.

1. Place main power switch handle (Figure 2, Item 5) onto electrical control box (Figure 2, Item 6) pointing towards rear of trailer.
2. Place mounting bracket (Figure 2, Item 3) on inside of electrical control box (Figure 2, Item 6) and align screw mounting holes.
3. Install nut (Figure 2, Item 7) and four screws (Figure 2, Item 8), tighten firmly.
4. Slide pin (Figure 2, Item 4) into center of mounting bracket (Figure 2, Item 3).
5. Slide main power switch (Figure 2, Item 1) onto mounting bracket (Figure 2, Item 3) and pin (Figure 2, Item 4) until properly seated.
6. Push din rail clip (Figure 2, Item 2) up to lock in place.
7. Place GFCI circuit breaker (Figure 1, Item 1) onto din rail clips (Figure 1, Item 2).
8. Reconnect electrical wires at main power switch (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Rotate main power switch handle on and off to ensure proper operation.
2. Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT BLANKET TOGGLE SWITCH REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)

References (cont.)
Electrical Wiring Schematic (FO-3)
WP 0010
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Blanket Toggle Switch.

REMOVAL

1. Open electrical control box lid (Figure 1, Item 1).
2. Remove four screws (Figure 1, Item 2) and flat washers (Figure 1, Item 3) that connect electrical control box front panel (Figure 1, Item 4) to electrical box (Figure 1, Item 5).
3. Rotate electrical control box front panel (Figure 1, Item 4) face down and slide into bottom of electrical control box (Figure 1, Item 5).

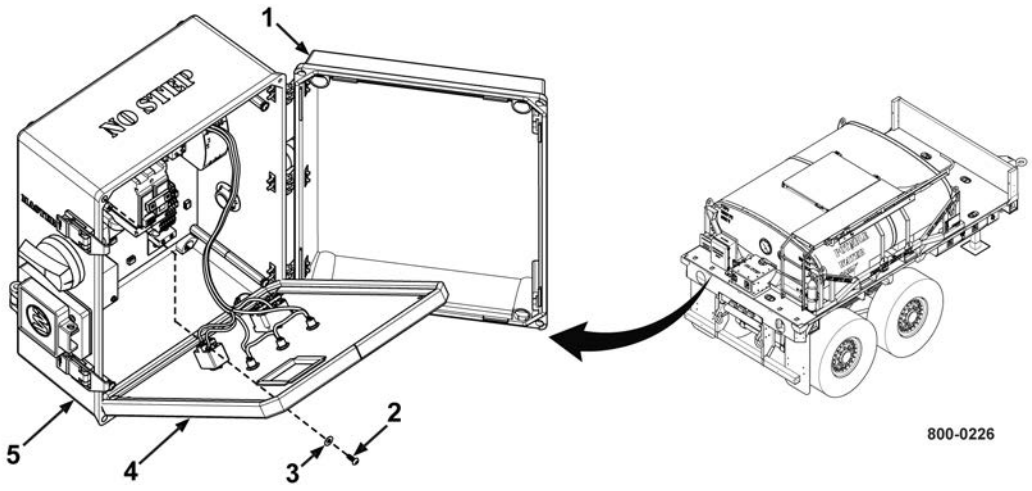


Figure 1. Electrical Control Box Front Panel Removal.

NOTE

Ensure all wires are properly marked prior to disconnecting.

4. Disconnect all wires from heat blanket toggle switch (Figure 2, Item 2).
5. Remove nut (Figure 2, Item 3), lock washer (Figure 2, Item 4), and positioning ring (Figure 2, Item 5) that mount heat blanket toggle switch (Figure 2, Item 2) to electrical control box front panel (Figure 2, Item 1).

REMOVAL - Continued

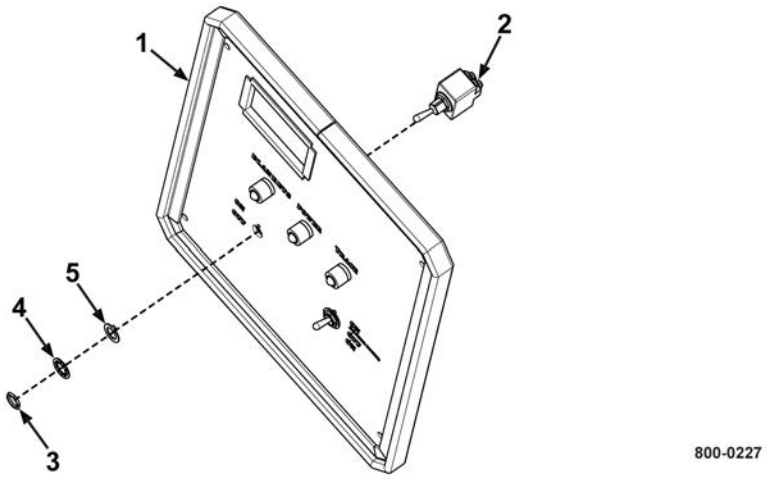


Figure 2. Heat Blanket Toggle Switch Removal.

END OF TASK

INSTALLATION

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

1. Install heat blanket toggle switch (Figure 2, Item 2) through rear of electrical control box front panel (Figure 2, Item 1).
2. Install positioning ring (Figure 2, Item 5) onto heat blanket toggle switch (Figure 2, Item 2) and into positioning ring mounting hole.
3. Install new lock washer (Figure 2, Item 4) and nut (Figure 2, Item 3) onto heat blanket toggle switch (Figure 2, Item 2), tighten firmly.
4. Install wiring leads onto rear of heat blanket toggle switch (Figure 2, Item 2).
5. Rotate electrical control box front panel (Figure 1, Item 4) into place on electrical control box (Figure 1, Item 5).
6. Install four screws (Figure 1, Item 2) and flat washers (Figure 1, Item 3) to connect electrical control box front panel (Figure 1, Item 4) to electrical control box (Figure 1, Item 5).
7. Close electrical control box lid (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Operate Heat Blanket Toggle Switch (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT TRACE TOGGLE SWITCH REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)

References (cont.)
Electrical Wiring Schematic (FO-3)
WP 0109
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Trace Toggle Switch.

REMOVAL

1. Open electrical control box lid (Figure 1, Item 1).
2. Remove four screws (Figure 1, Item 2) and flat washers (Figure 1, Item 3) that connect electrical control box front panel (Figure 1, Item 4) to the electrical control box (Figure 1, Item 5).
3. Rotate electrical control box front panel (Figure 1, Item 4) face down and slide into bottom of electrical control box (Figure 1, Item 5).

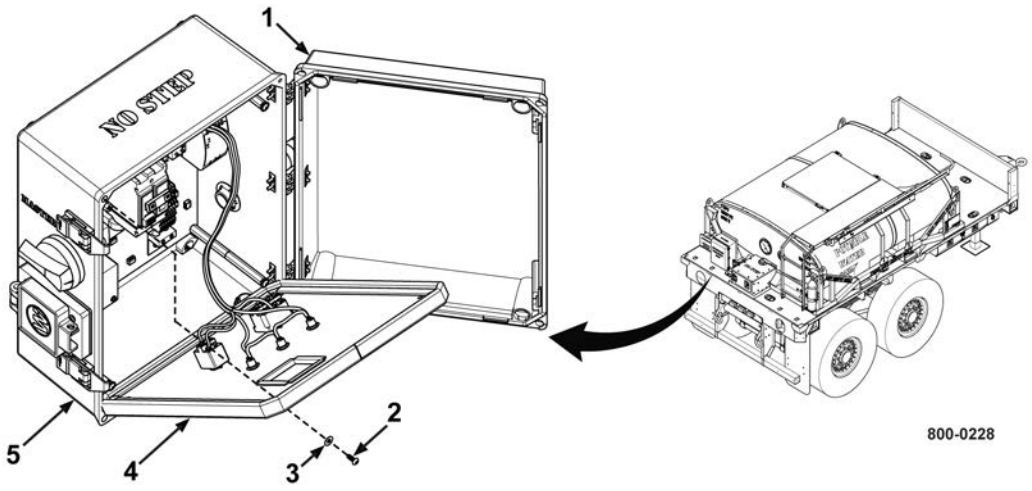


Figure 1. Electrical Control Box Front Panel Removal.

NOTE

Ensure all wires are properly marked prior to disconnecting.

4. Disconnect all wires from heat trace toggle switch (Figure 2, Item 2).
5. Remove nut (Figure 2, Item 3), lock washer (Figure 2, Item 4), and positioning ring (Figure 2, Item 5) that mount heat trace toggle switch (Figure 2, Item 2) to electrical control box front panel (Figure 2, Item 1).

REMOVAL - Continued

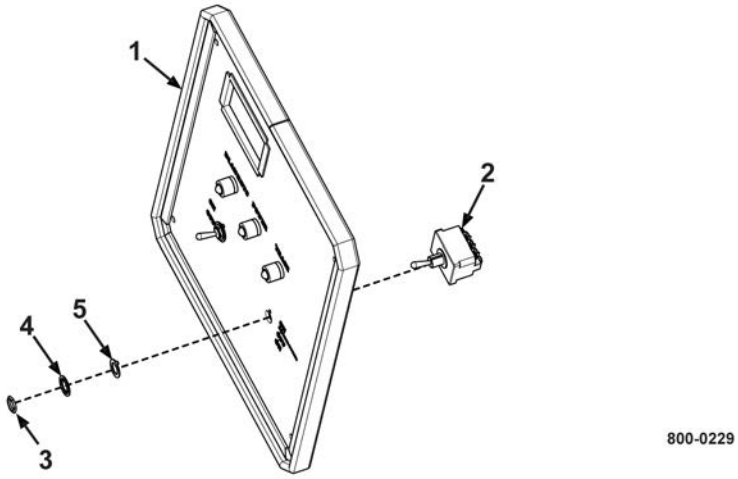


Figure 2. Heat Trace Toggle Switch Removal.

END OF TASK

INSTALLATION

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

1. Install heat trace toggle switch (Figure 2, Item 2) through rear of electrical control box front panel (Figure 2, Item 1).
2. Install positioning ring (Figure 2, Item 5) onto heat trace toggle switch (Figure 2, Item 2) and into positioning ring mounting hole.
3. Install new lock washer (Figure 2, Item 4) and nut (Figure 2, Item 3) onto heat trace toggle switch (Figure 2, Item 2), tighten firmly.
4. Install wiring leads onto rear of heat trace toggle switch (Figure 2, Item 2).
5. Rotate electrical control box front panel (Figure 1, Item 4) into place on electrical control box (Figure 1, Item 5).
6. Install four screws (Figure 1, Item 2) and flat washers (Figure 1, Item 3) to connect electrical control box front panel (Figure 1, Item 4) to electrical box (Figure 1, Item 5).
7. Close electrical control box lid (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Operate Heat Trace Toggle Switch (WP 0109).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX FRONT PANEL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)

References (cont.)
Electrical Wiring Schematic (FO-3)
WP 0010
WP 0123
WP 0124
WP 0131
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1), electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Electrical Control Box Front Panel.

REMOVAL

1. Open electrical control box lid (Figure 1, Item 1).
2. Remove four screws (Figure 1, Item 2) and flat washers (Figure 1, Item 3) that connect electric control box front panel (Figure 1, Item 4) to electrical control box (Figure 1, Item 5).
3. Remove electrical control box front panel (Figure 1, Item 4) from electrical control box (Figure 1, Item 5), placing to the side leaving all wires connected.

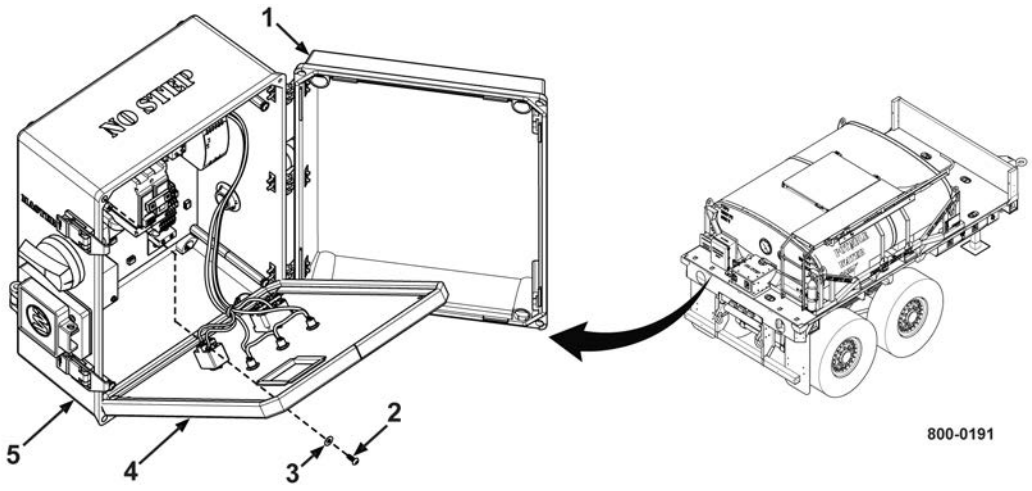


Figure 1. Electrical Control Box Front Panel Removal.

END OF TASK

DISASSEMBLY

1. Remove Heat Trace Toggle Switch (WP 0124).
2. Remove Heat Blanket Toggle Switch (WP 0123).
3. Remove Indicator Lights (WP 0131).
4. Remove electrical control box panel seal (Figure 2, Item 2) from outer edge of electrical control box front panel (Figure 2, Item 1).
5. Remove circuit breaker window molding (Figure 2, Item 3) from opening in electrical control box front panel (Figure 2, Item 1).

DISASSEMBLY - Continued

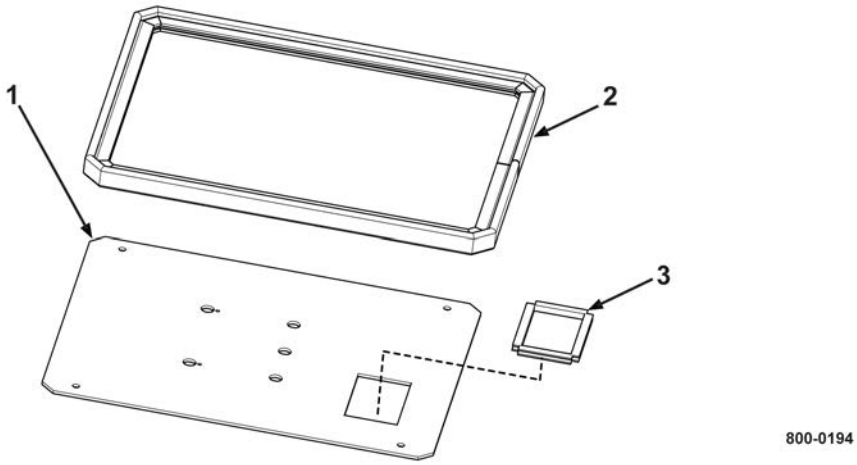


Figure 2. Circuit Breaker Window Molding Removal.

END OF TASK

ASSEMBLY

1. Install Heat Trace Toggle Switch (WP 0124).
2. Install Heat Blanket Toggle Switch (WP 0123).
3. Install Indicator Light (WP 0131).
4. Press electrical control box panel seal (Figure 2, Item 2) onto outer edge of electrical control box front panel (Figure 2, Item 1).
5. Insert circuit breaker window molding (Figure 2, Item 3) into opening in electrical control box front panel (Figure 2, Item 1).

END OF TASK

INSTALLATION

NOTE

Refer to electrical wiring schematic (FO-3) for wiring locations, components and description.

1. Replace wire ties and protective wire shield as needed.
2. Align electrical control box front panel (Figure 3, Item 3) over Ground Fault Circuit Interrupter (GFCI) circuit breaker (Figure 3, Item 4).
3. Install four flat washers (Figure 3, Item 2) and screws (Figure 3, Item 1). Tighten firmly.

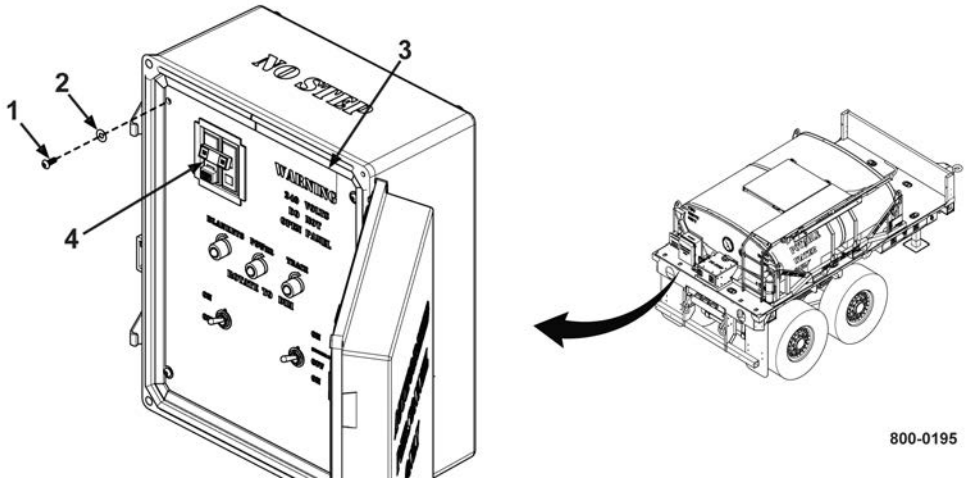


Figure 3. Electrical Control Box Front Panel Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Verify Temperature Protection Controls (WP 0010) operate correctly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CIRCUIT BREAKER WINDOW MOLDING REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

References
WP 0172, Figure 18

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Circuit Breaker Window Molding.

REMOVAL

Remove circuit breaker window molding (Figure 1, Item 1) from circuit breaker window in electrical control box front panel (Figure 1, Item 2).

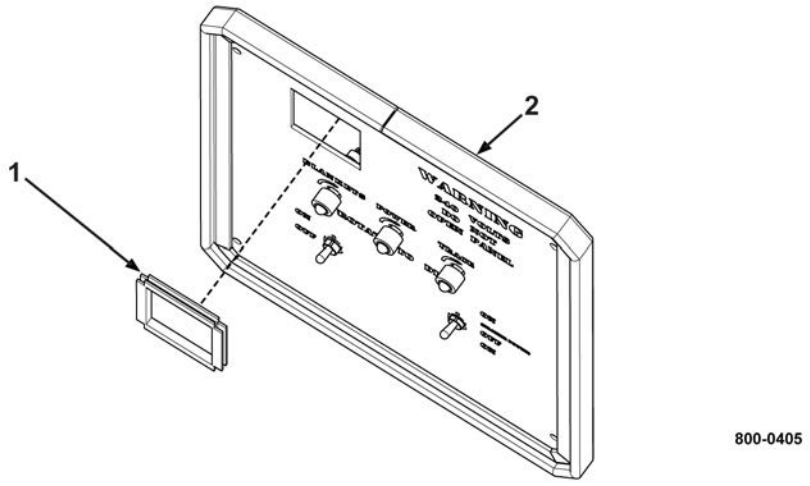


Figure 1. Circuit Breaker Window Molding Replacement.

END OF TASK

INSTALLATION

Install circuit breaker window molding (Figure 1, Item 1) onto circuit breaker window in electrical control box front panel (Figure 1, Item 2).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRE TIE, PUSH IN MOUNT REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

Materials/Parts
Wire Tie, Black (WP 0190, Table 1, Item 24)
Wire Tie, Push In Mount (WP 0172, Figure 18, Item 62)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Wire Tie, Push In Mount.

REMOVAL

1. Remove wire ties as needed.
2. Remove wire tie, push in mount (Figure 1, Item 1) from electrical control box rear panel (Figure 1, Item 2).

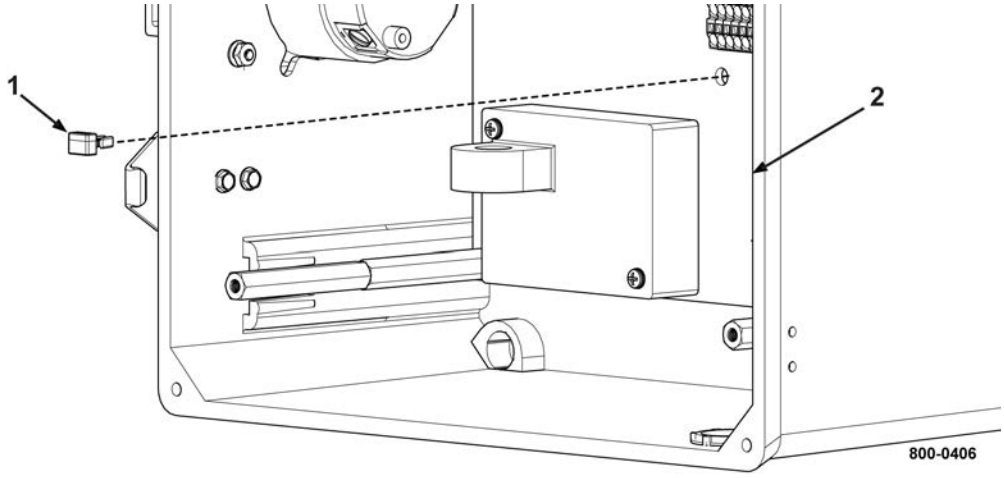


Figure 1. Wire Tie, Push In Mount Replacement.

END OF TASK

INSTALLATION

1. Install wire tie, push in mount (Figure 1, Item 1) into electrical control box rear panel (Figure 1, Item 2).
2. Install wire ties as needed.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX REAR PANEL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)
Electrical Wiring Schematic (FO-3)
WP 0010
WP 0112
WP 0113
WP 0114
WP 0115
WP 0116

References (cont.)
WP 0117
WP 0118
WP 0120
WP 0127
WP 0129
WP 0130
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Electrical Control Box Rear Panel.

REMOVAL

NOTE

Ensure all wires are properly marked prior to disconnecting.

1. Disconnect all wires that enter electrical control box (Figure 1, Item 1) from external conduits (Figure 1, Item 2).
2. Disconnect all ground wires from terminal ground lug (Figure 1, Item 3).
3. Disconnect three wires from top portion of main power switch (Figure 1, Item 4).
4. Remove four standoffs (Figure 1, Item 5) that connect electrical control box rear panel (Figure 1, Item 6) to electrical control box (Figure 1, Item 1).
5. Remove electrical control box rear panel (Figure 1, Item 6) from electrical control box (Figure 1, Item 1).

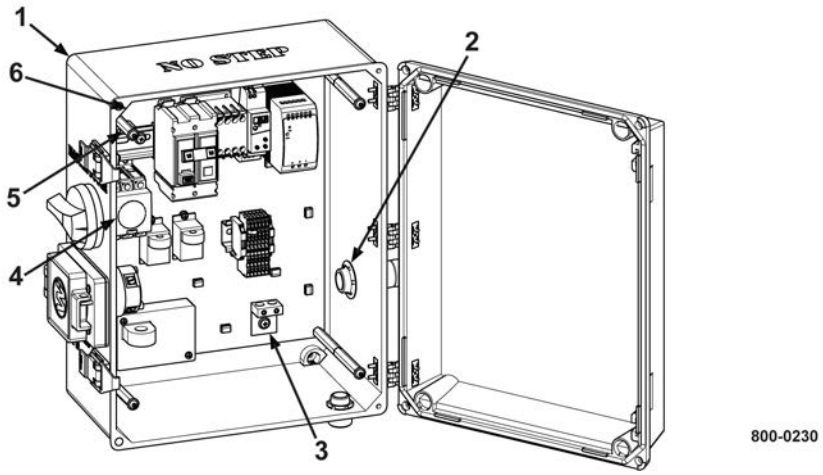


Figure 1. Electrical Control Box Wire Replacement.

END OF TASK

DISASSEMBLY

1. Remove 4 Pole Contactor (WP 0114)
2. Remove Heat Blanket Thermostat (WP 0115)
3. Remove 12 VDC Power Supply (WP 0117)
4. Remove Terminal Block Replacement (WP 0118)
5. Remove Terminal Ground Lug (WP 0120)
6. Remove GFCI Circuit Breaker (WP 0113)
7. Remove Wire Tie, Push In Mount (WP 0127)
8. Remove Heat Trace Current Sensor (WP 0112)
9. Remove Electrical Control Box Rear Panel Din Rail (WP 0129)
10. Remove GFCI Circuit Breaker Din Rail (WP 0130)

END OF TASK

ASSEMBLY

1. Install GFCI Circuit Breaker Din Rail (WP 0130)
2. Install Electrical Control Box Rear Panel Din Rail (WP 0129)
3. Install Heat Trace Current Sensor (WP 0112)
4. Install Wire Tie, Push In Mount (WP 0127)
5. Install GFCI Circuit Breaker (WP 0113)
6. Install Terminal Ground Lug (WP 0120)
7. Install Terminal Block (WP 0118)
8. Install 12 VDC Power Supply (WP 0117)
9. Install Heat Blanket Thermostat (WP 0115)
10. Install 4 Pole Contactor (WP 0114)
11. Adjust Heat Blanket Thermostat (WP 0116)

END OF TASK

INSTALLATION

1. Align electrical control box rear panel (Figure 2, Item 3) onto electrical control box (Figure 2, Item 4).
2. Place GFCI circuit breaker (Figure 2, Item 1) onto din rail clips (Figure 2, Item 2).

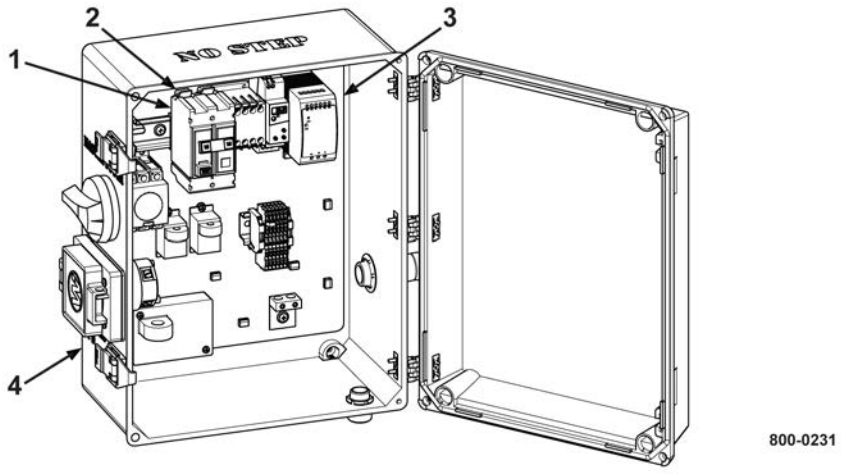


Figure 2. Electrical Control Box Rear Panel Installation.

3. Install four standoffs (Figure 1, Item 5) that connect electrical control box rear panel (Figure 1, Item 6) to electrical control box (Figure 1, Item 1).
4. Reconnect three wires to top portion of main power switch (Figure 1, Item 4).
5. Reconnect all ground wires to terminal ground lug (Figure 1, Item 3).
6. Reconnect all wires that enter electrical control box (Figure 1, Item 1) from external conduits (Figure 1, Item 2).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Electrical Control Box Front Panel (WP 0125).
2. Check operation of temperature protection controls (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX REAR PANEL DIN RAIL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Inter-vehicular Harness Disconnected (TM 9-2330-394-13&P)
Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- There are two rear panel din rails that attach directly to the rear panel. Each is removed and installed the same way. Electrical components must be removed before removing the din rail.
- Electrical component wires do not need to be removed to replace din rail.

NOTE

This work package covers:

Removal and Installation of Electrical Control Box Rear Panel Din Rail.

REMOVAL

Remove two flat washers (Figure 1, Item 1) and screws (Figure 1, Item 2) that connect electrical control box rear panel din rail (Figure 1, Item 3) to electrical control box rear panel (Figure 1, Item 4).

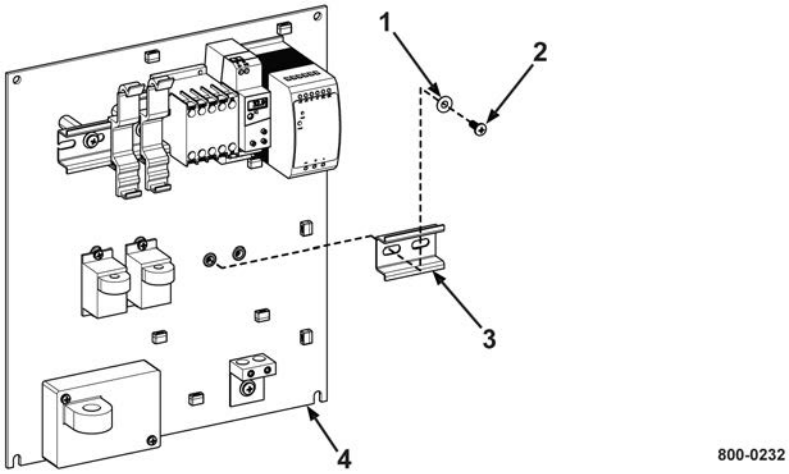


Figure 1. Electrical Control Box Rear Panel Din Rail Replacement.

END OF TASK

INSTALLATION

1. Install two screws (Figure 1, Item 2) and new flat washers (Figure 1, Item 1) that connect electrical control box rear panel din rail (Figure 1, Item 3) to electrical control box rear panel (Figure 1, Item 4).
2. Replace all removed electrical components on rear panel din rail (Figure 1, Item 3).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER DIN RAIL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Electrical Control Box Front Panel Removed (WP 0125)
GFCI Circuit Breaker Removed (WP 0113)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Ground Fault Circuit Interrupter (GFCI) Circuit Breaker Din Rail.

REMOVAL

Remove two screws (Figure 1, Item 1) and flat washers (Figure 1, Item 2) that connect GFCI circuit breaker din rail (Figure 1, Item 3) to standoffs (Figure 1, Item 4).

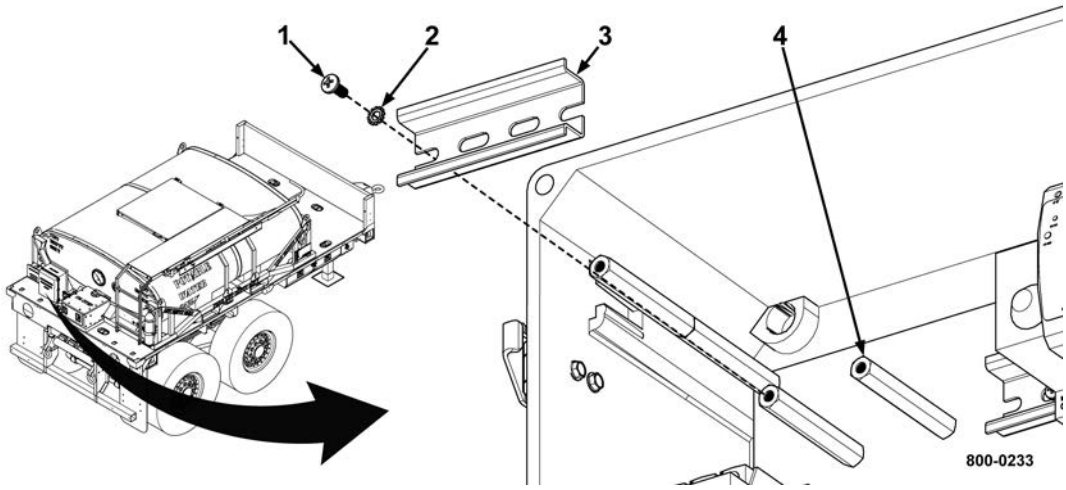


Figure 1. GFCI Circuit Breaker Din Rail Replacement.

END OF TASK

INSTALLATION

Install two screws (Figure 1, Item 1) and flat washers (Figure 1, Item 2) that connect GFCI circuit breaker din rail (Figure 1, Item 3) to standoffs (Figure 1, Item 4).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install GFCI Circuit Breaker (WP 0113).
2. Install Electrical Control Box Front Panel (WP 0125).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INDICATOR LIGHT HOLDER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

References
Electrical Wiring Diagram (FO-1)
Electrical Wiring List (FO-2)

References (cont.)
Electrical Wiring Schematic (FO-3)
WP 0010
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Indicator Light Holder.

REMOVAL

NOTE

There are three indicator lights on electric control box front panel. Each is removed and replaced the same way.

1. Remove four screws (Figure 1, Item 1) and flat washers (Figure 1, Item 2) that connect electrical control box front panel (Figure 1, Item 3) to electrical control box (Figure 1, Item 4).
2. Rotate electrical control box front panel (Figure 1, Item 3) face down and slide into bottom of electrical control box (Figure 1, Item 4).

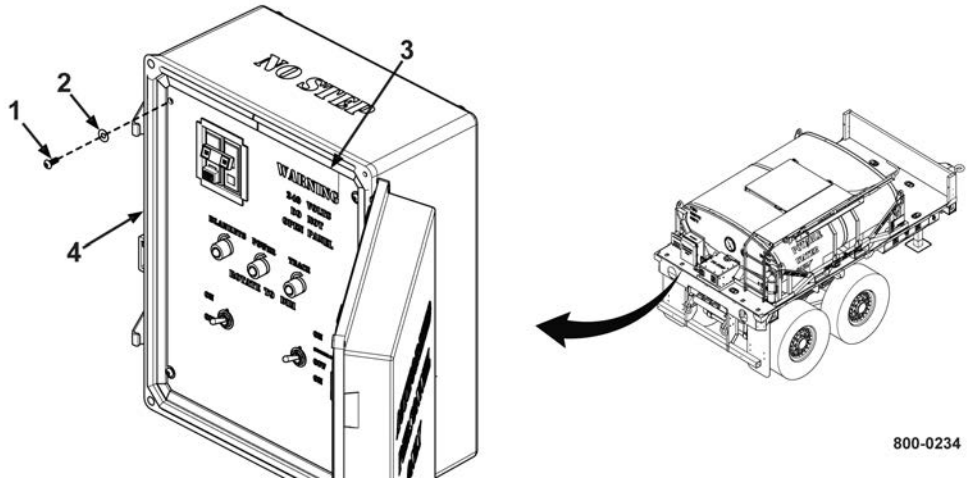


Figure 1. Electrical Control Box Front Panel Removal.

REMOVAL - Continued

NOTE

Ensure all wires are properly marked prior to disconnecting.

3. Unscrew indicator light lens (Figure 2, Item 6) on indicator light holder (Figure 2, Item 5) being replaced.
4. Unplug both wires (Figure 2, Item 2) connected to rear of indicator light holder (Figure 2, Item 5).
5. Remove nut (Figure 2, Item 3) and washer (Figure 2, Item 4) that connect indicator light holder (Figure 2, Item 5) to electrical control box front panel (Figure 2, Item 1).

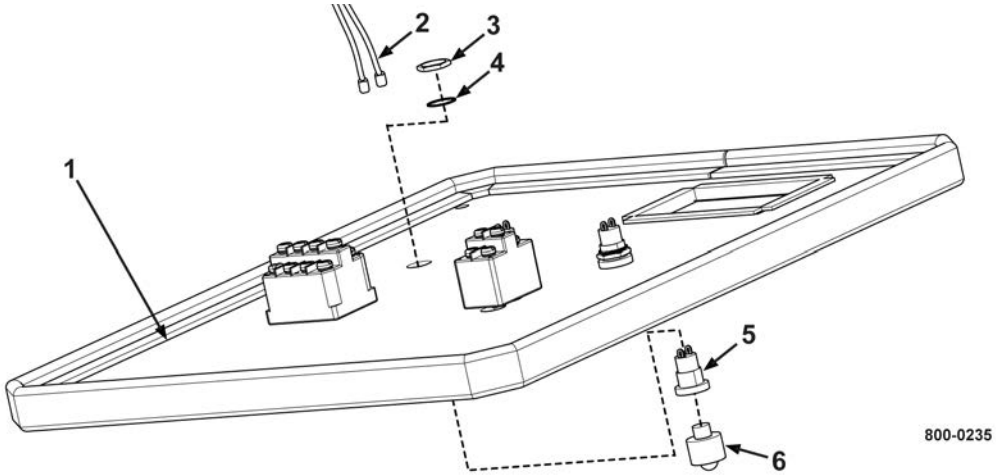


Figure 2. Indicator Light Holder Removal.

END OF TASK

INSTALLATION

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

1. Install indicator light lamp holder (Figure 3, Item 5) onto electrical control box front panel (Figure 3, Item 1).
2. Install washer (Figure 3, Item 4) and nut (Figure 3, Item 3) onto indicator light lamp holder (Figure 3, Item 5).
3. Reconnect wires (Figure 3, Item 2) onto indicator light lamp holder (Figure 3, Item 5).
4. Replace indicator light lens (Figure 3, Item 6).

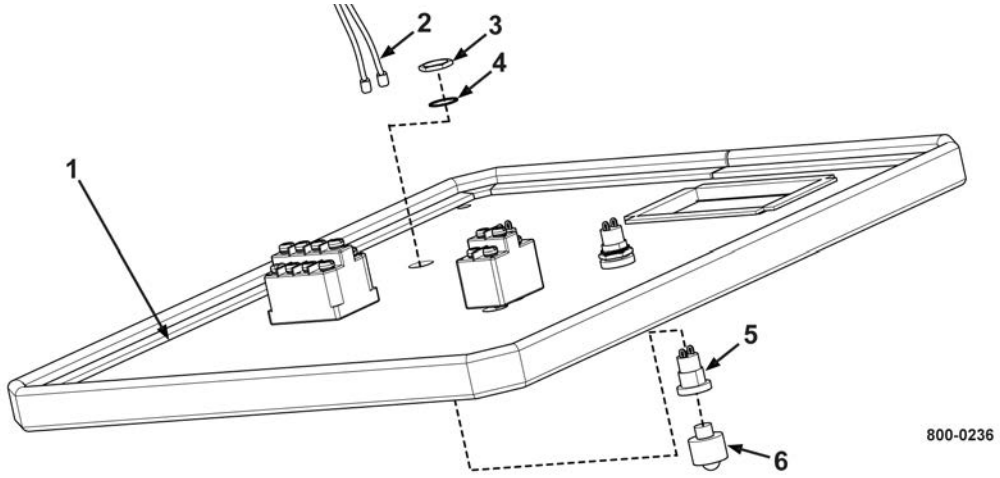


Figure 3. Indicator Light Lamp Holder Installation.

5. Align electrical control box front panel (Figure 4, Item 3) over Ground Fault Circuit Interrupter (GFCI) circuit breaker (Figure 4, Item 5).
6. Install four screws (Figure 4, Item 1) and flat washers (Figure 4, Item 2) that connect electrical control box front panel (Figure 4, Item 3) to electrical control box (Figure 4, Item 4).

INSTALLATION - Continued

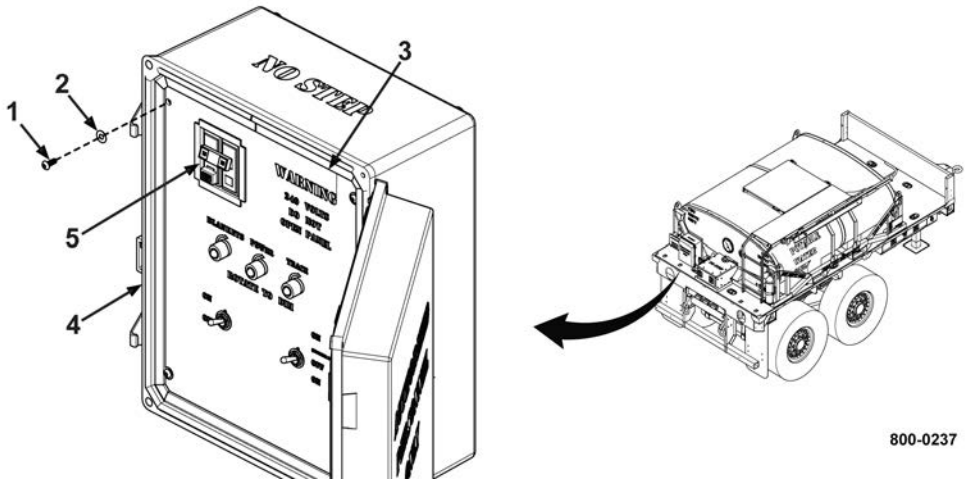


Figure 4. Electrical Control Box Front Panel Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Check operation of indicator light (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INDICATOR LIGHT BULB REPLACEMENT

INITIAL SETUP:

References
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- There are three indicator lights which require the same bulb. Each is replaced the same way.
- When indicator light cap is turned all the way clockwise it is in blackout mode and light is not visible.

This work package covers:

Removal and Installation of Indicator Light Bulb.

REMOVAL

1. Unscrew indicator light cap (Figure 1, Item 1) from indicator light base (Figure 1, Item 2) on electrical control box front panel (Figure 1, Item 3) by turning counter-clockwise.
2. Remove the bulb (Figure 1, Item 4) (discard bulb) from bottom of indicator light cap (Figure 1, Item 1).

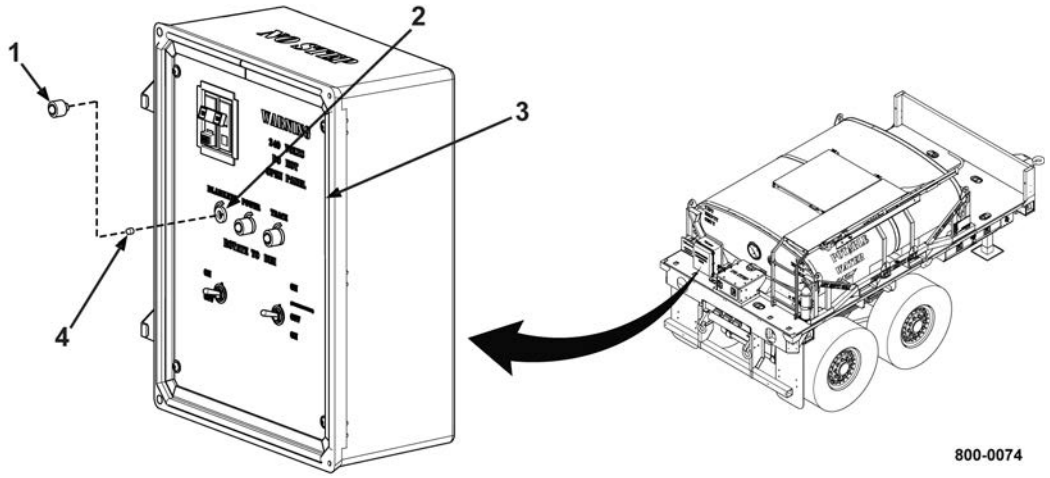


Figure 1. Indicator Light Bulb Replacement.

END OF TASK

INSTALLATION

1. Slide new bulb (Figure 1, Item 4) into indicator light cap (Figure 1, Item 1).
2. Replace indicator light cap (Figure 1, Item 1) onto indicator light base (Figure 1, Item 2), on electrical control box front panel (Figure 1, Item 3).

END OF TASK

END OF WORK PACKAGE

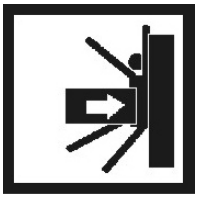
FIELD MAINTENANCE
BLACKOUT LENS REPLACEMENT

INITIAL SETUP:

References
WP 0172, Figure 18

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



Trailer must be secure. Always chock wheels before working on the Camel II. Failure to comply could result in serious injury or death to personnel or damage to equipment.

NOTE

There are three black out lenses, each is removed and installed the same way.

This work package covers:

Removal and Installation of Blackout Lens.

REMOVAL

1. Unscrew indicator light blackout lens (Figure 1, Item 1) from indicator light base (Figure 1, Item 2) on electrical control box front panel (Figure 1, Item 3) by turning counter-clockwise.
2. Remove bulb (Figure 1, Item 4) from bottom of indicator light blackout lens (Figure 1, Item 1).

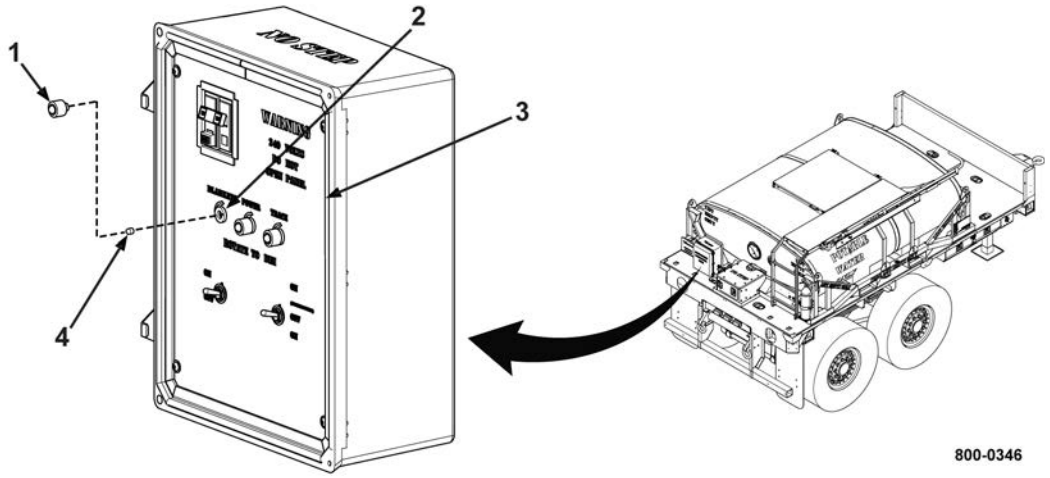


Figure 1. Indicator Light Blackout Lens Replacement.

END OF TASK

INSTALLATION

1. Slide bulb (Figure 1, Item 4) into indicator light blackout lens (Figure 1, Item 1).
2. Install indicator light blackout lens (Figure 1, Item 1) onto indicator light base (Figure 1, Item 2) on electrical control box front panel (Figure 1, Item 3) by turning clockwise.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CHEMICAL STORAGE BOX ASSEMBLY REPAIR

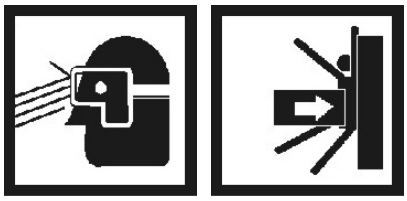
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Materials/Parts
Locknut, Hexagon Qty: 4 (WP 0173, Figure 19, Item 6)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Chemical Storage Box Assembly.

REMOVAL

Remove four locknuts (Figure 1, Item 1) (discard locknuts), flat washers (Figure 1, Item 2), and chemical storage box (Figure 1, Item 3) from studs (Figure 1, Item 4) welded to mount bracket (Figure 1, Item 5).

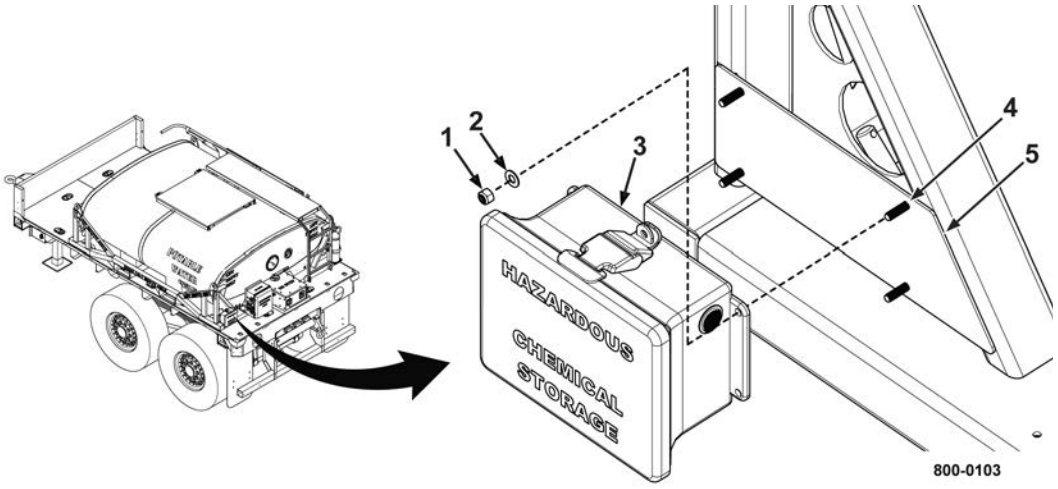


Figure 1. Chemical Storage Box Replacement.

END OF TASK

DISASSEMBLY

1. Remove chemical holding strap (Figure 2, Item 2) from strap mounting plates (Figure 2, Item 4).
2. Remove buckle (Figure 2, Item 3) from holding strap (Figure 2, Item 2) as needed.

NOTE

There are two strap mounting plates, each is removed the same way.

3. Remove two bolts (Figure 2, Item 5) and flat washers (Figure 2, Item 6) that connect strap mounting plates (Figure 2, Item 4) to chemical storage box (Figure 2, Item 1).

DISASSEMBLY - Continued

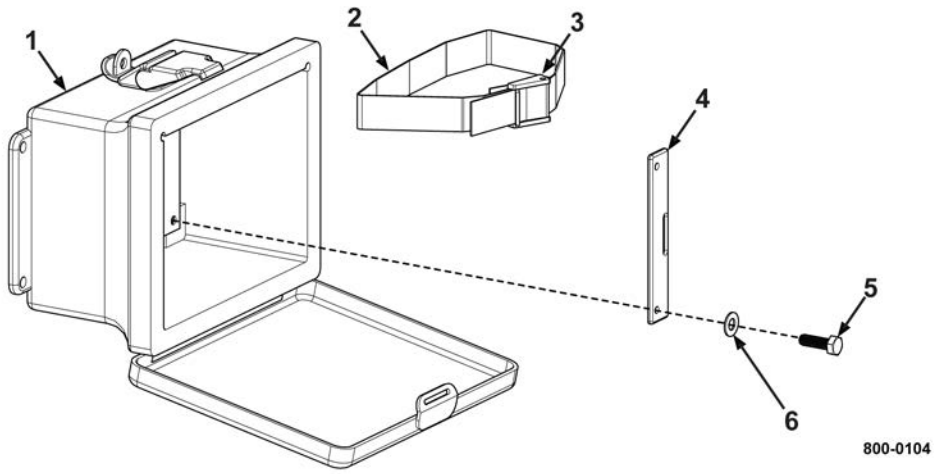


Figure 2. Chemical Storage Box Disassembly.

END OF TASK

ASSEMBLY

1. Install two bolts (Figure 2, Item 5) and flat washers (Figure 2, Item 6) that connect strap mounting plates (Figure 2, Item 4) to chemical storage box (Figure 2, Item 1).
2. Install buckle (Figure 2, Item 3) onto holding strap (Figure 2, Item 2) as needed.
3. Install chemical holding strap (Figure 2, Item 2) into strap mounting plates (Figure 2, Item 4).

END OF TASK

INSTALLATION

Install chemical storage box (Figure 1, Item 3), four flat washers (Figure 1, Item 2), and new locknuts (Figure 1, Item 1) to studs (Figure 1, Item 4) on mount bracket (Figure 1, Item 5). Tighten.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX WOOL INSULATION REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Glove, Rubber (WP 0191, Table 1, Item 6)

References
WP 0174, Figure 20

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Main Dispensing Valve Shaft Cover Removed (WP 0144)
Discharge Box Lid Removed (WP 0145)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Wear gloves when handling wool insulation.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Wool Insulation.

REMOVAL

NOTE

Do not discard wool insulation, it can be reused.

1. Remove hard foam top (Figure 1, Item 1) from discharge box (Figure 1, Item 2).
2. Remove wool insulation (Figure 1, Item 3) from discharge box (Figure 1, Item 2).

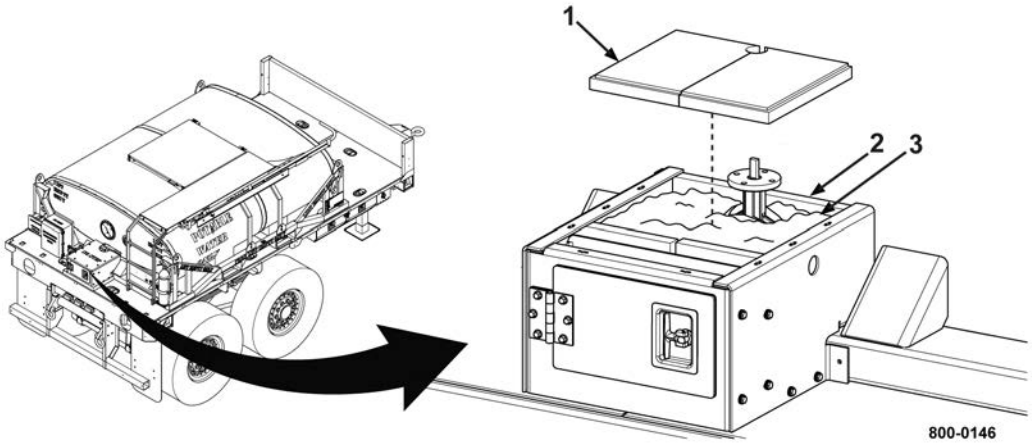


Figure 1. Discharge Box Wool Insulation Replacement.

END OF TASK

INSTALLATION

Replace wool insulation (Figure 1, Item 3) into discharge box (Figure 1, Item 2) then replace hard foam top (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Discharge Box Lid (WP 0145).
2. Install Main Dispensing Valve Shaft Cover (WP 0144).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MAIN DISPENSING HANDLE AND LOCK PLATE REPLACEMENT

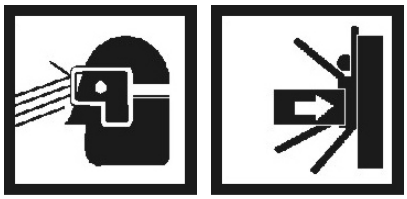
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Materials/Parts
Lock Washer Qty: 2 (WP 0175, Figure 21, Item 6)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Main Dispensing Handle and Lock Plate.

REMOVAL

1. Loosen set screw (Figure 1, Item 1) on valve handle (Figure 1, Item 2) and remove from valve shaft (Figure 1, Item 3).
2. Remove two nuts (Figure 1, Item 4), lock washers (Figure 1, Item 5) (discard lock washers), and bolts (Figure 1, Item 6) from valve handle lock plate (Figure 1, Item 7).
3. Remove valve handle lock plate (Figure 1, Item 7).

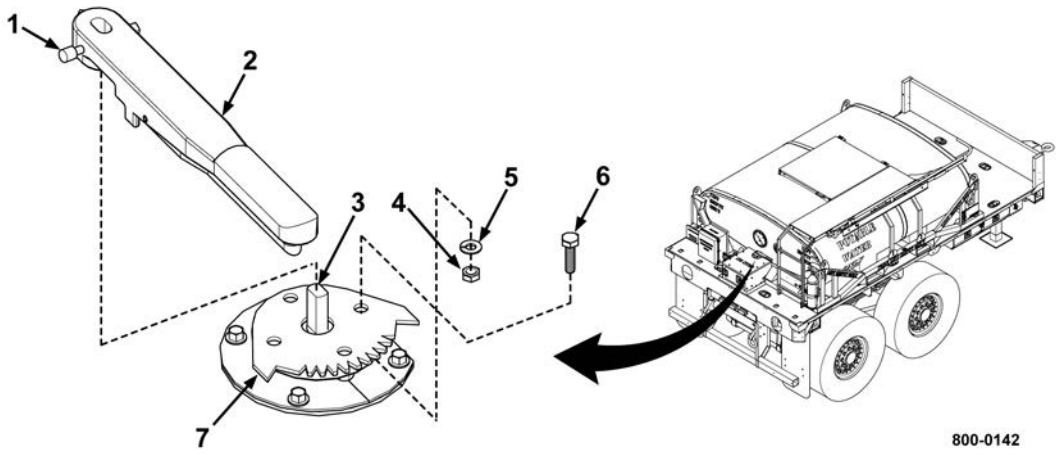


Figure 1. Main Dispensing Handle Lock Plate Replacement.

END OF TASK

INSTALLATION

1. Place valve handle lock plate (Figure 1, Item 7) over valve shaft (Figure 1, Item 3). Teeth of valve handle lock plate should be facing toward right side of trailer.
2. Install two bolts (Figure 1, Item 6), new lock washers (Figure 1, Item 5), and nuts (Figure 1, Item 4). Tighten.
3. Place valve handle (Figure 1, Item 2) onto valve shaft (Figure 1, Item 3) with handle pointing towards right side of trailer. Tighten set screw (Figure 1, Item 1).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MAIN DISPENSING VALVE REPLACEMENT

INITIAL SETUP:

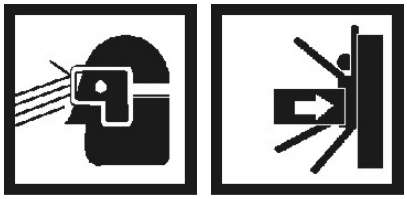
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
Wrench, Torque, Click, Ratcheting, ½ in. Drive, 250 lb-ft (WP 0191, Table 1, Item 19)

References
WP 0176, Figure 21

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Water Tank Drained (WP 0005)
Main Dispensing Handle/Lock Plate Removed (WP 0136)
Main Dispensing Valve Shaft Cover Removed (WP 0144)
Discharge Box Lid Removed (WP 0145)
Discharge Box Wool Insulation Removed (WP 0135)
Discharge Box Hard Foam Insulation Removed (WP 0142)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Main Dispensing Valve.

REMOVAL

1. Remove four bolts (Figure 1, Item 1) and flat washers (Figure 1, Item 2) from valve/flange assembly (Figure 1, Item 3).
2. Remove silicone tape (Figure 1, Item 4) from each end of heat trace (Figure 1, Item 5).
3. Unwrap heat trace (Figure 1, Item 5) from valve/flange assembly (Figure 1, Item 3).
4. Remove main dispensing valve (Figure 1, Item 3).

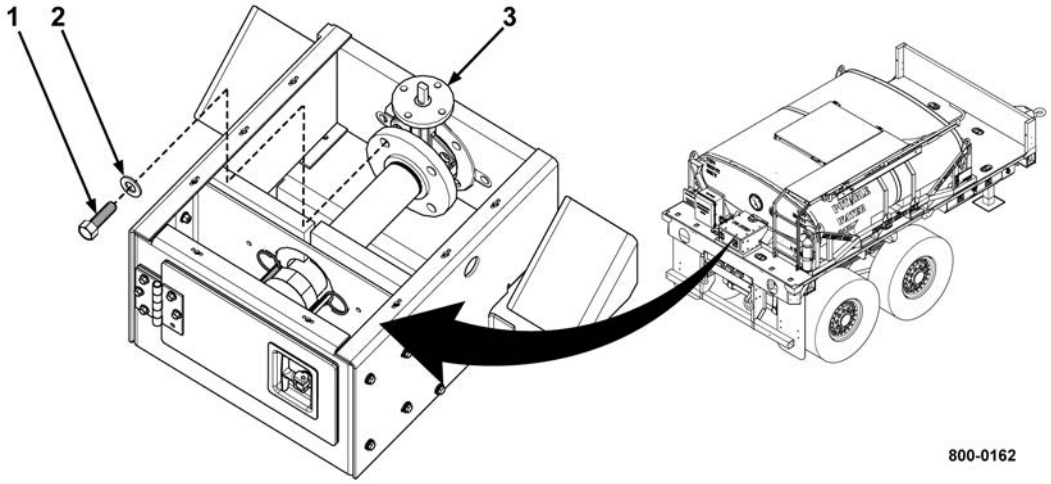


Figure 1. Main Dispensing Valve Assembly Removal.

END OF TASK

INSTALLATION

NOTE

Ensure surfaces that are bolted together are clean and free of debris before installing.

1. Align Main Dispensing Valve (Figure 2, Item 3) between tank flange (Figure 2, Item 4) and hose extension flange (Figure 2, item 5). Insert and start four bolts (Figure 2, Item 1) and flat washers (Figure 2, Item 2) into valve/flange assembly approximately ½ in.

INSTALLATION - Continued

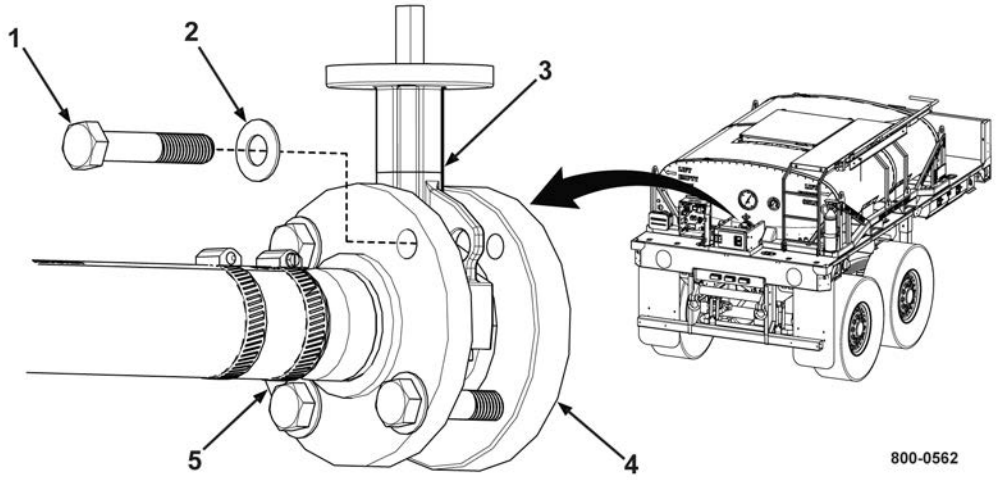


Figure 2. Bolt and Washer Installation.

2. Place edge of heat trace rubber sleeve (Figure 3, Item 1) on top of discharge hose extension (Figure 3, Item 2).

3. In a clockwise rotation wrap heat trace (Figure 3, Item 3) one full rotation around discharge hose extension base of flange (Figure 3, Item 4).

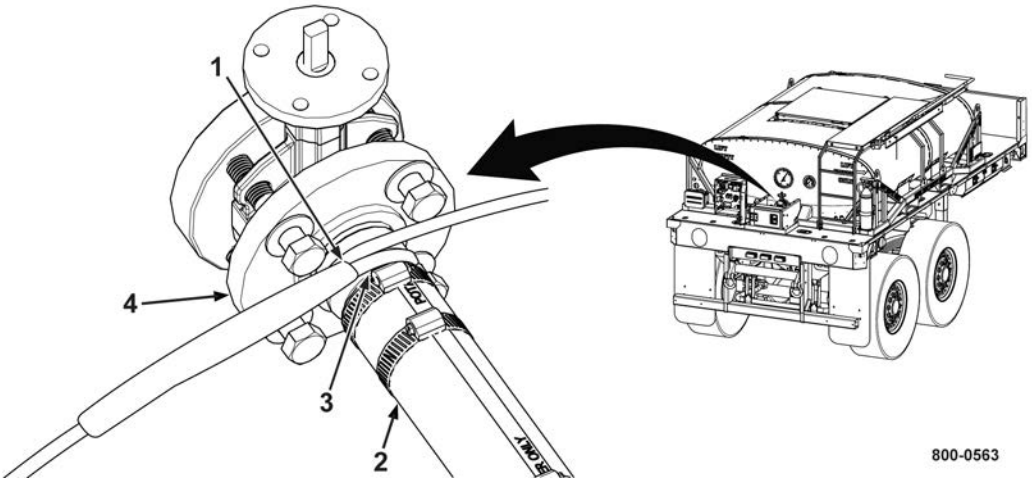


Figure 3. Heat Trace Installation.

INSTALLATION - Continued

NOTE

When wrapping main dispensing valve, heat trace must be placed under four mounting bolts.

4. Remove the right side lower bolt (Figure 4, Item 1) and flat washer (Figure 4, Item 2).
5. Cross heat trace (Figure 4, Item 3) over flange (Figure 4, Item 4), along bottom of main dispensing valve (Figure 4, Item 5).
6. Replace right side lower bolt (Figure 4, Item 1) and flat washer (Figure 4, Item 2), do not tighten.

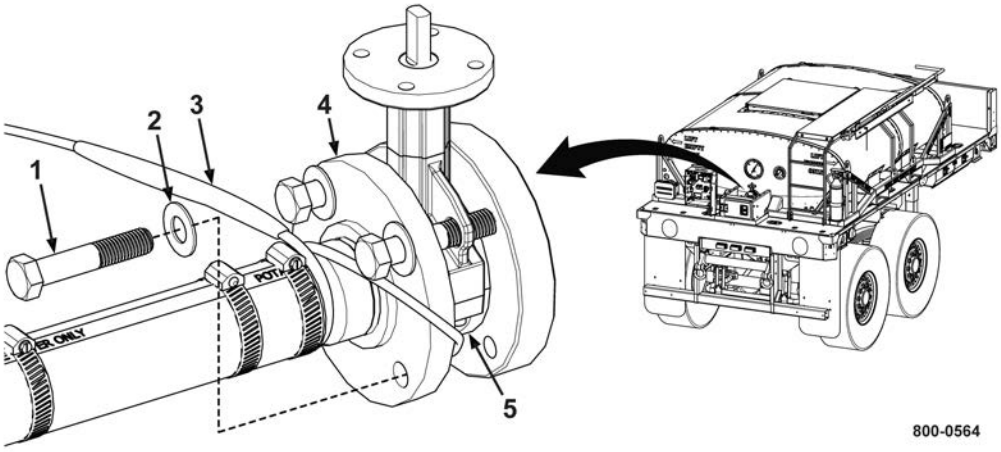


Figure 4. Heat Trace Wrap under Curbside Lower Bolt.

7. Continue wrapping heat trace (Figure 5, Item 1) around main dispensing valve (Figure 5, Item 2) twice clockwise, removing and replacing remaining three flat washers (Figure 5, Item 3) and bolts (Figure 5, Item 4), installing heat trace under each bolt in progression.

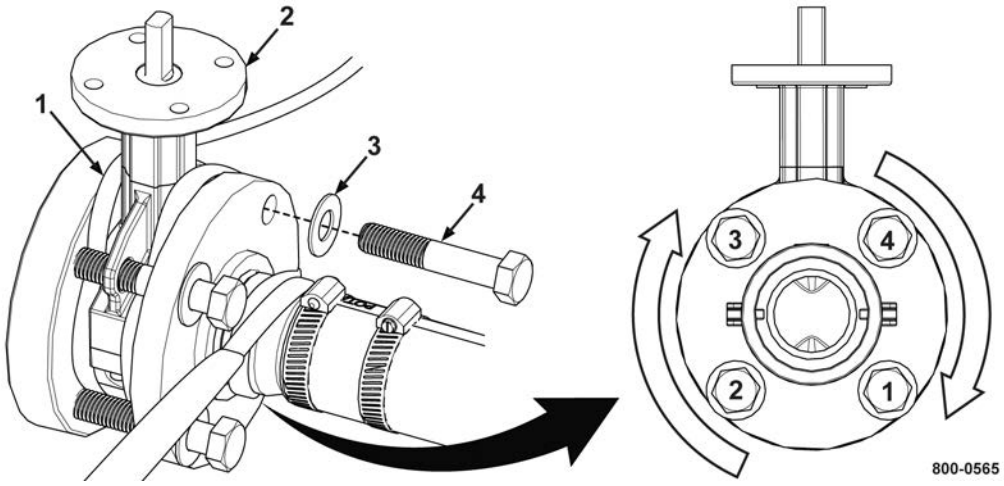


Figure 5. Heat Trace Wrapping.

INSTALLATION - Continued

8. Continue to wrap heat trace (Figure 6, Item 1) in clockwise rotation around water tank discharge port flange (Figure 6, Item 2).

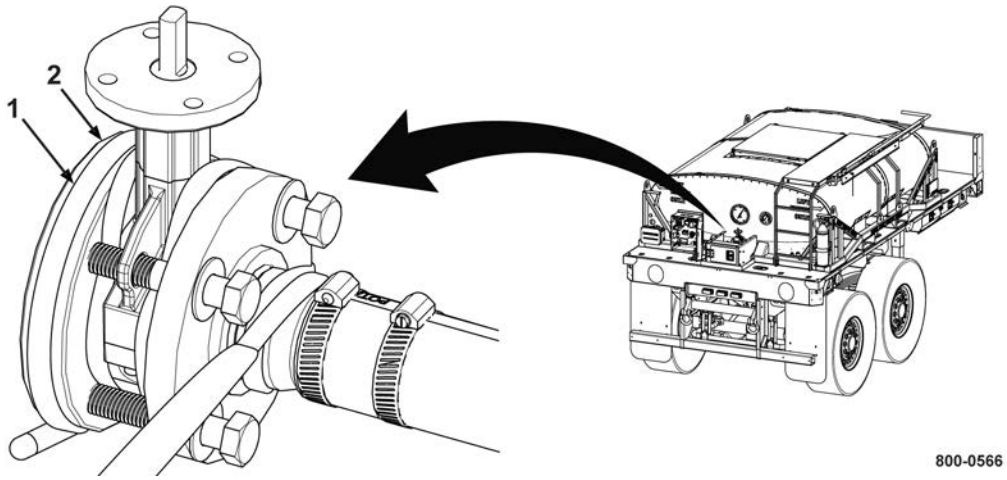


Figure 6. Water Tank Discharge Port Wrapping.

CAUTION

When tightening four mounting bolts ensure heat trace is not pinched between main dispensing valve and mounting flanges. Failure to comply may result in damage to equipment.

9. Alternately tighten mounting bolts (Figure 7, Item 1) in cross pattern until torqued to 125 lb-ft (169.4 N•m).

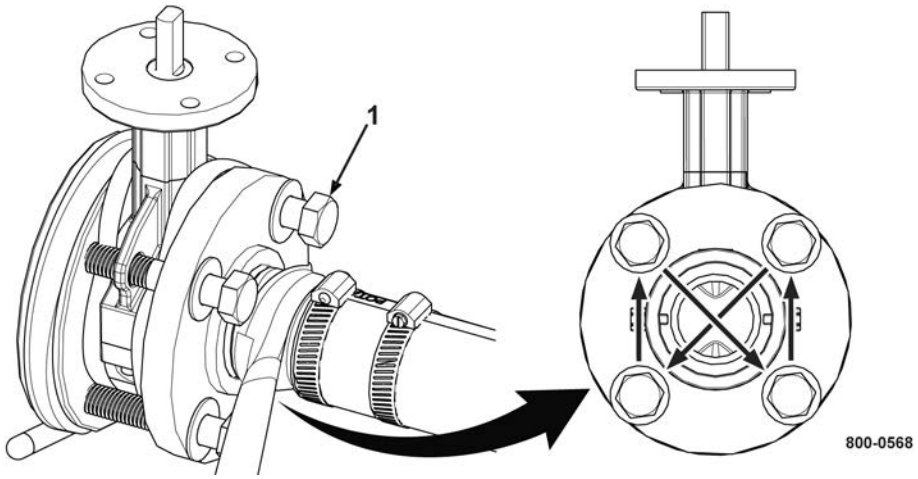


Figure 7. Mounting Bolt Tightening.

INSTALLATION - Continued

10. Wrap silicone tape (Figure 8, Item 1) tightly around heat trace (Figure 8, Item 2) at water tank discharge port flange (Figure 8, Item 3) holding heat trace firmly in place.
11. Wrap silicone tape (Figure 8, Item 5) tightly around heat trace at hose extension flange (Figure 8, Item 4), holding heat trace firmly in place.

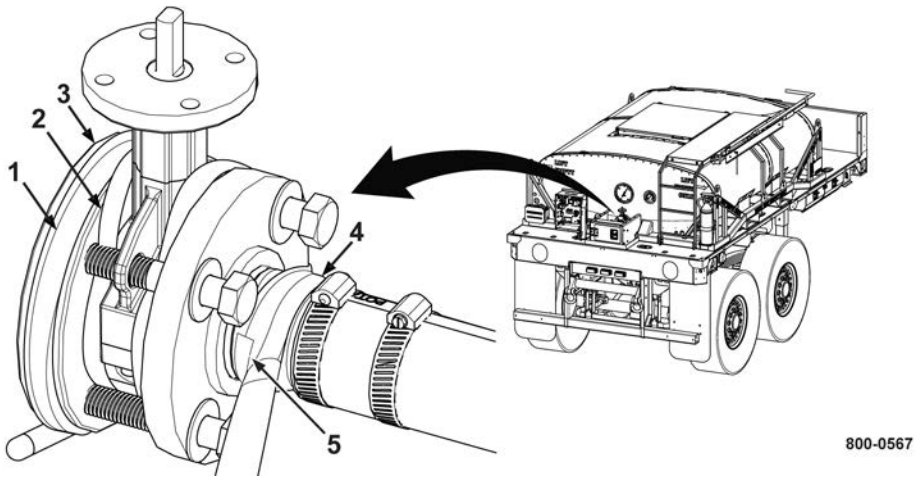


Figure 8. Silicone Tape Application.

END OF TASK

FOLLOW-ON

1. Fill tank with small amount of water, check for leaks.
2. Install Discharge Box Hard Foam Insulation (WP 0142).
3. Install Discharge Box Wool Insulation (WP 0135).
4. Install Discharge Box Lid (WP 0145).
5. Install Main Dispensing Valve Shaft Cover (WP 0144).
6. Install Main Dispensing Handle/Lock Plate (WP 0136).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HEAT TRACE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)
- Wrench, Torque, Click, Ratcheting, ½ in. Drive, 250 lb-ft (WP 0191, Table 1, Item 19)

Materials/Parts
- Wire Tie, Black (WP 0190, Table 1, Item 24)
- Silicone Tape, 2 in. width (WP 0176, Figure 22, Item 2)

Personnel Required
- Two

References
- Electrical Wiring Diagram (FO-1)

References (cont.)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0010

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)
- Trailer Ladder Deployed (WP 0006)
- Water Tank Drained (WP 0005)
- Main Dispensing Handle/Lock Plate Removed (WP 0136)
- Main Dispensing Valve Shaft Cover Removed (WP 0144)
- Discharge Box Lid Removed (WP 0145)
- Discharge Box Wool Insulation Removed (WP 0135)
- Electrical Control Box Front Panel Removed (WP 0125)

WARNING

- Wear eye protection when working on or under the Camel II.
- Trailer must be secure. Always chock wheels before working on or under the Camel II.
- Ensure external power source is disconnected from electrical box and inter-vehicular harness is disconnected from prime mover, before removing electrical box front panel.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

- Remove wire ties as needed.
- Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

This work package covers:

Removal and Installation of Heat Trace.

REMOVAL

1. Ensure main power switch (Figure 1, Item 1) is off and external power is disconnected.

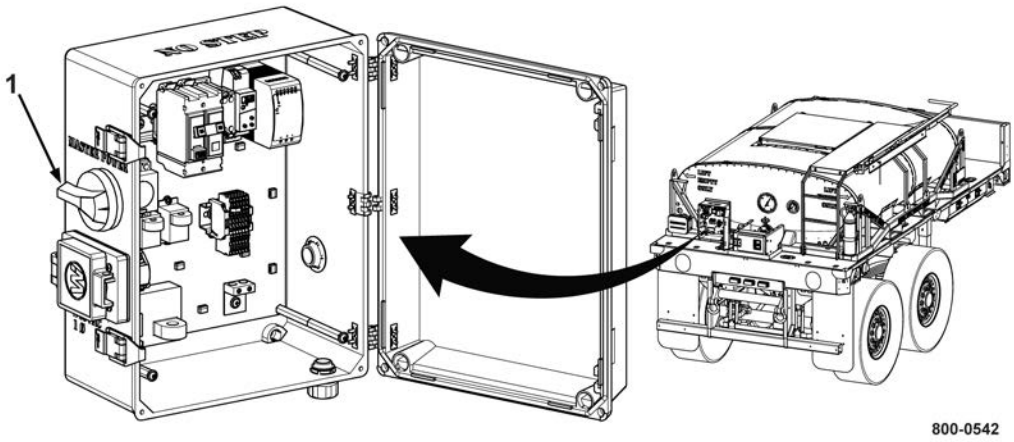


Figure 1. Main Power Switch.

REMOVAL - Continued

2. Place small flat tip screwdriver into square opening (Figure 2, Item 1) in orange terminal block above black wire 1EW2 (Figure 2, Item 2) and push screwdriver into opening until wire comes free.

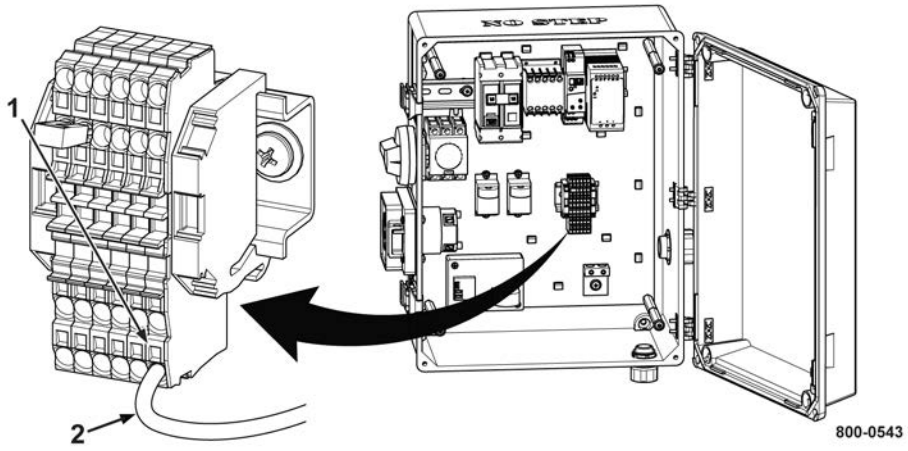


Figure 2. Wire 1EW2 Removal.

3. Disconnect green wire 1EW3 (Figure 3, Item 1) from ground terminal lug (Figure 3, Item 2).

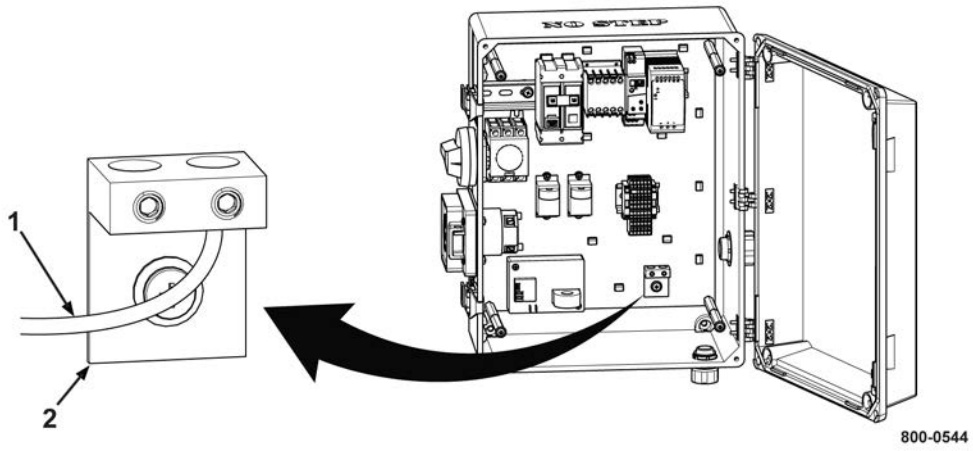


Figure 3. Wire 1EW3 Removal.

REMOVAL - Continued

4. Disconnect three wires (Figure 4, Item 1) from number three terminal (Figure 4, Item 2), heat trace toggle switch (Figure 4, Item 3).
5. Remove white wire 1EW1 (Figure 4, Item 5) from heat trace current sensor (Figure 4, Item 4).

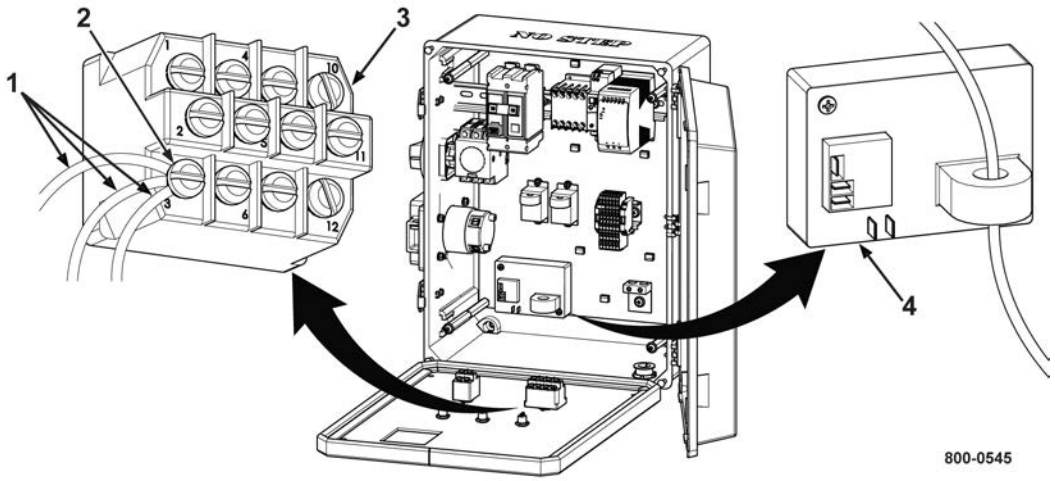


Figure 4. Wire 1EW1 Removal.

6. Remove heat trace electrical connections (Figure 5, Item 3) from outlet heater conduit (Figure 5, Item 1), inside discharge box (Figure 5, Item 2),
7. Remove silicone tape (Figure 5, Item 4) holding heat trace to water tank discharge port (Figure 5, Item 5) and discharge hose extension (Figure 5, Item 6).

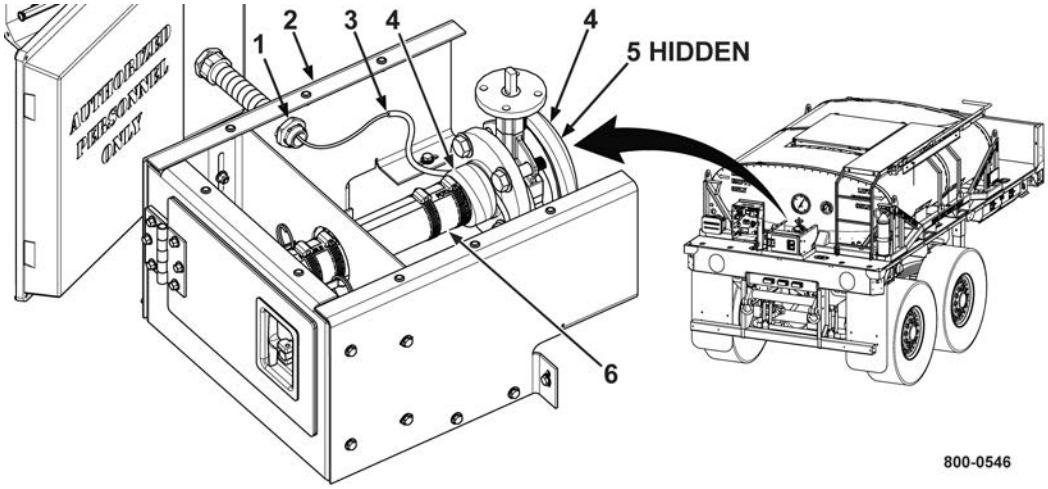


Figure 5. Electrical Connections Removal.

REMOVAL - Continued

8. Remove four bolts (Figure 6, Item 1) and flat washers (Figure 6, Item 2) from valve/flange assembly (Figure 6, Item 3).
9. Remove heat trace (Figure 6, Item 4) from main dispensing valve assembly (Figure 6, Item 5).

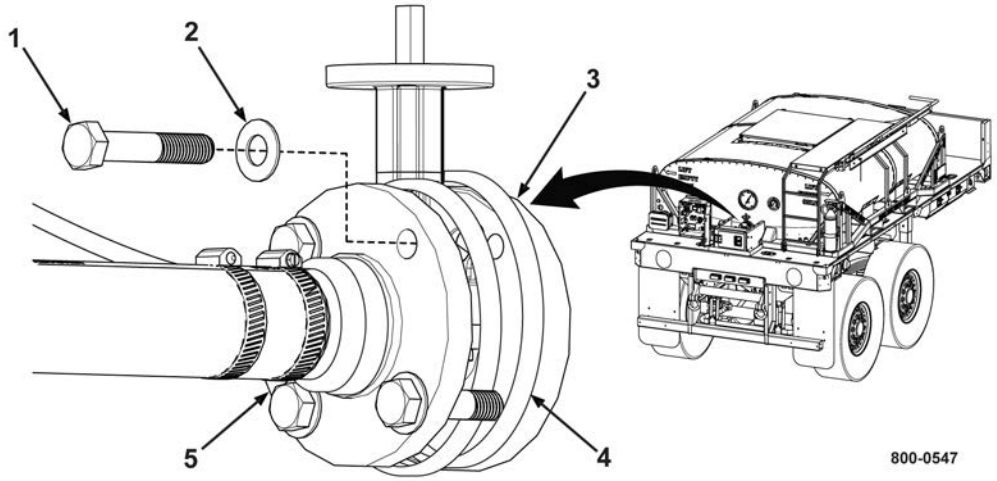


Figure 6. Heat Trace Removal.

END OF TASK

INSTALLATION

1. Start four bolts (Figure 7, Item 1) and flat washers (Figure 7, Item 2) into valve/flange assembly (Figure 7, Item 3) approximately ½ in.

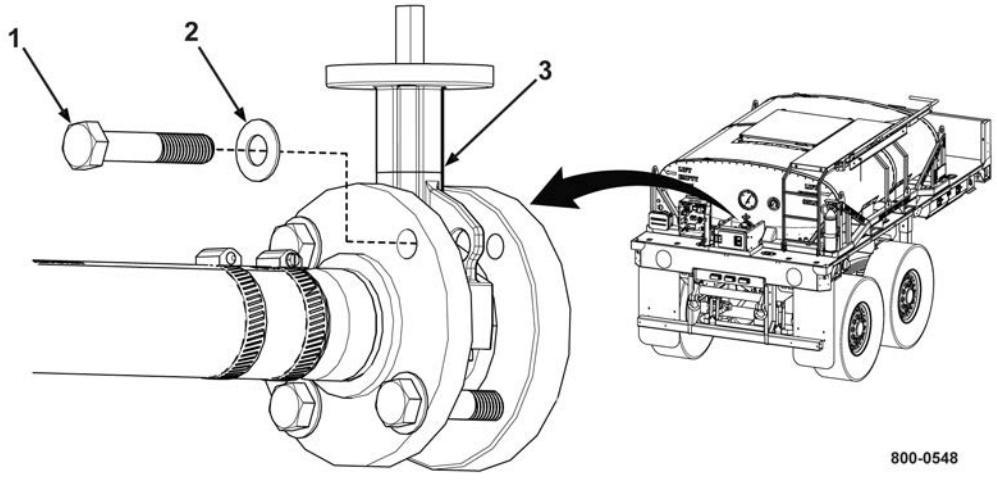


Figure 7. Bolt and Washer Installation.

INSTALLATION - Continued

2. Place edge of rubber sleeve (Figure 8, Item 1) on top of discharge hose extension (Figure 8, Item 2).
3. In a clockwise rotation wrap heat trace (Figure 8, Item 3) one full rotation around discharge hose extension base of flange (Figure 8, Item 4).

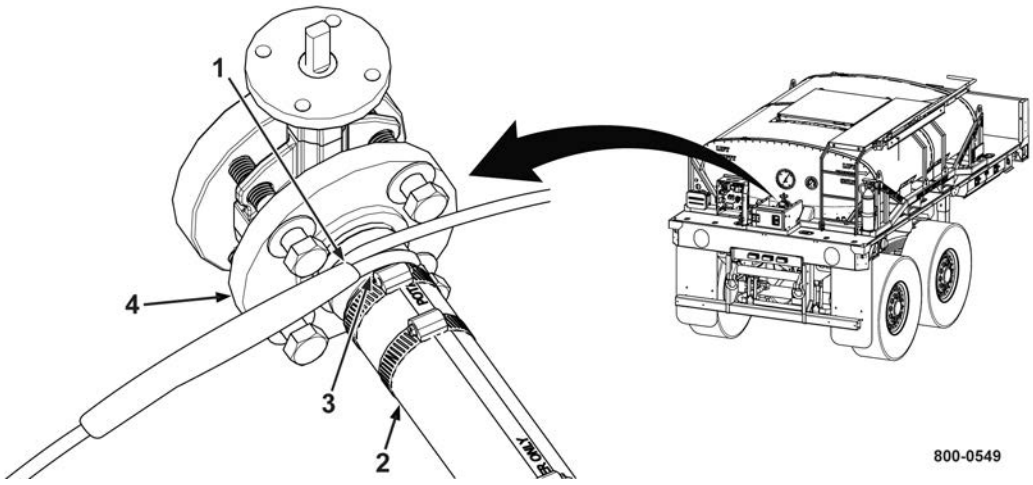


Figure 8. Heat Trace Installation.

NOTE

When wrapping main dispensing valve, heat trace must be placed under four mounting bolts.

4. Remove the curbside lower bolt (Figure 9, Item 1) and flat washer (Figure 9, Item 2).
5. Cross heat trace (Figure 9, Item 3) over flange (Figure 9, Item 4), along bottom of main dispensing valve (Figure 9, Item 5).
6. Replace curbside lower bolt (Figure 9, Item 1) and flat washer (Figure 9, Item 2), do not tighten.

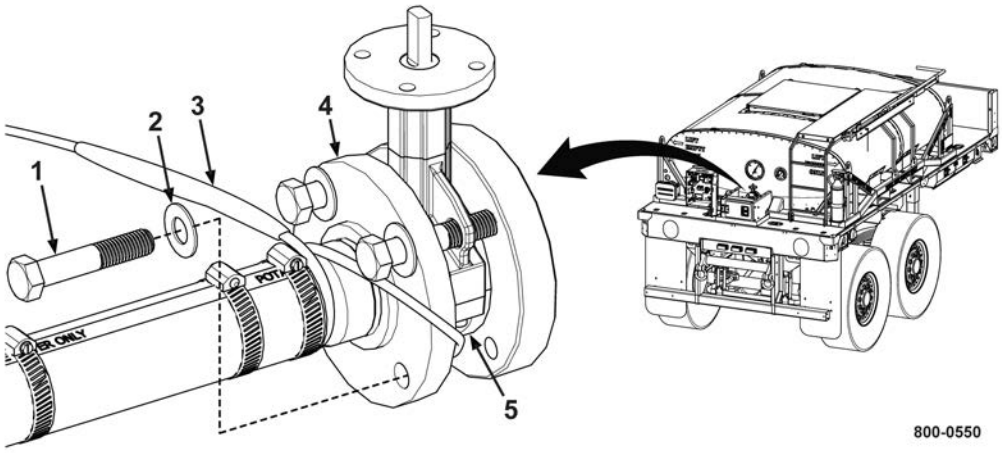


Figure 9. Heat Trace Wrap Under Curbside Lower Bolt.

INSTALLATION - Continued

7. Continue wrapping heat trace (Figure 10, Item 1) around main dispensing valve (Figure 10, Item 2) twice clockwise, removing and replacing remaining three flat washers (Figure 10, Item 3) and bolts (Figure 10, Item 4), installing heat trace under each bolt in progression.

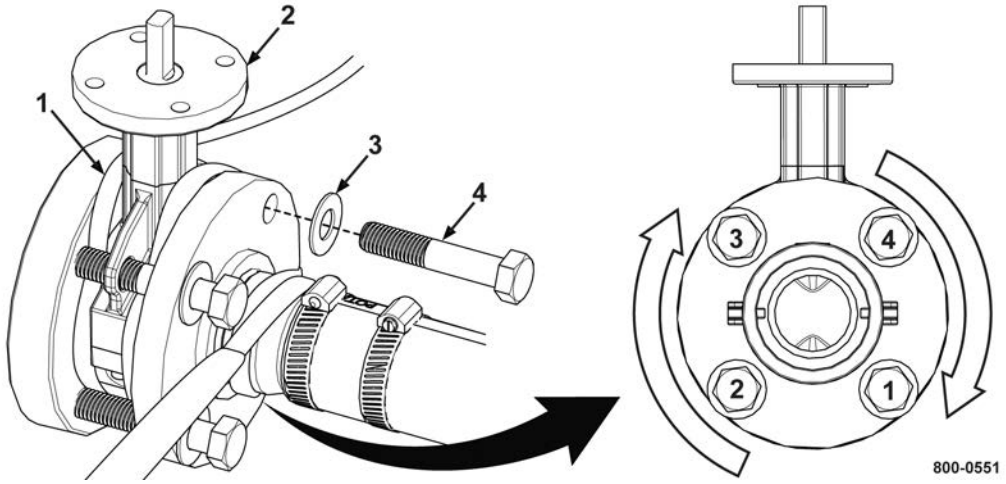


Figure 10. Heat Trace Wrapping.

8. Continue to wrap heat trace (Figure 11, Item 1) in clockwise rotation around water tank discharge port (Figure 11, Item 2).

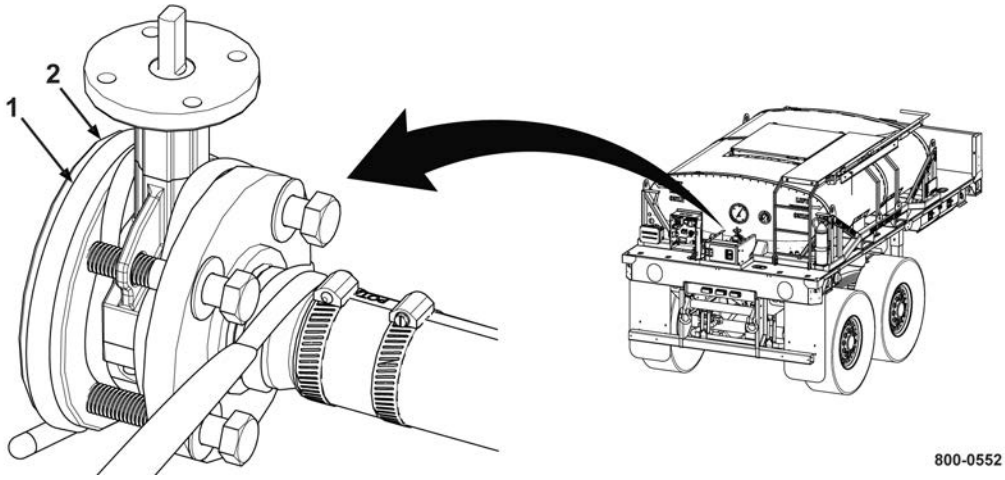


Figure 11. Water Tank Discharge Port Wrapping.

INSTALLATION - Continued

CAUTION

When tightening four mounting bolts ensure heat trace is not pinched between main dispensing valve and mounting flange. Failure to comply may cause damage to equipment.

9. Alternately tighten mounting bolts (Figure 12, Item 1) in cross pattern until torqued to 125 lb-ft (169.4 N•m).

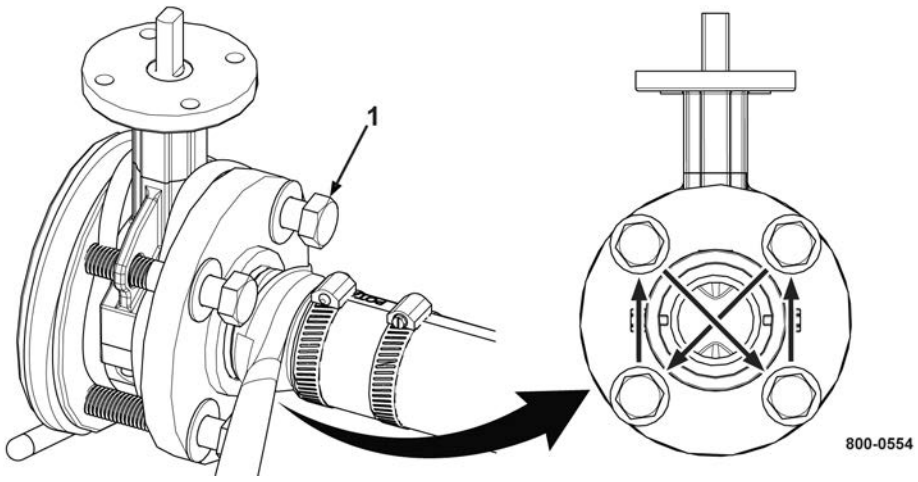


Figure 12. Mounting Bolt Tightening.

10. Wrap silicone tape (Figure 13, Item 1) tightly around heat trace (Figure 13, Item 2) at water tank discharge port (Figure 13, Item 3) holding heat trace firmly in place.

11. Wrap silicone tape tightly around heat trace at hose extension flange (Figure 13, Item 4), holding heat trace firmly in place.

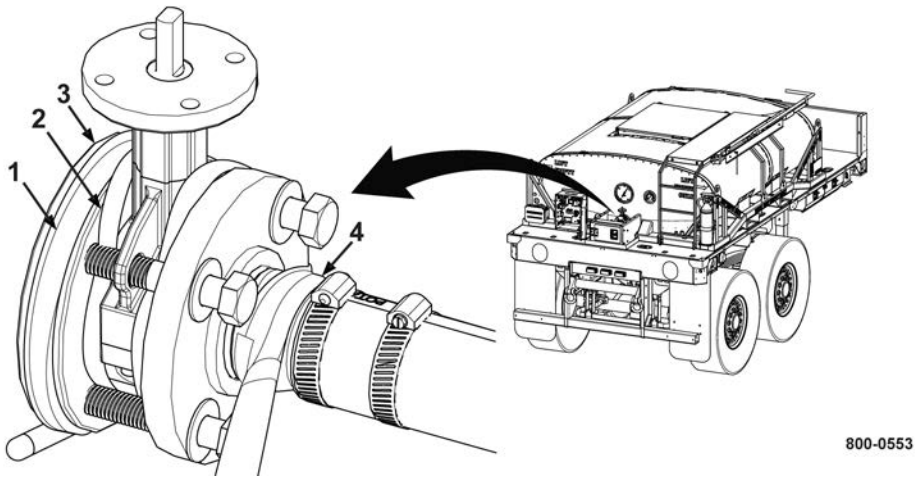


Figure 13. Silicone Tape Application.

INSTALLATION - Continued

12. Place heat trace electrical connections (Figure 14, Item 3) through outlet heater conduit (Figure 14, Item 1) in discharge box (Figure 14, Item 2).

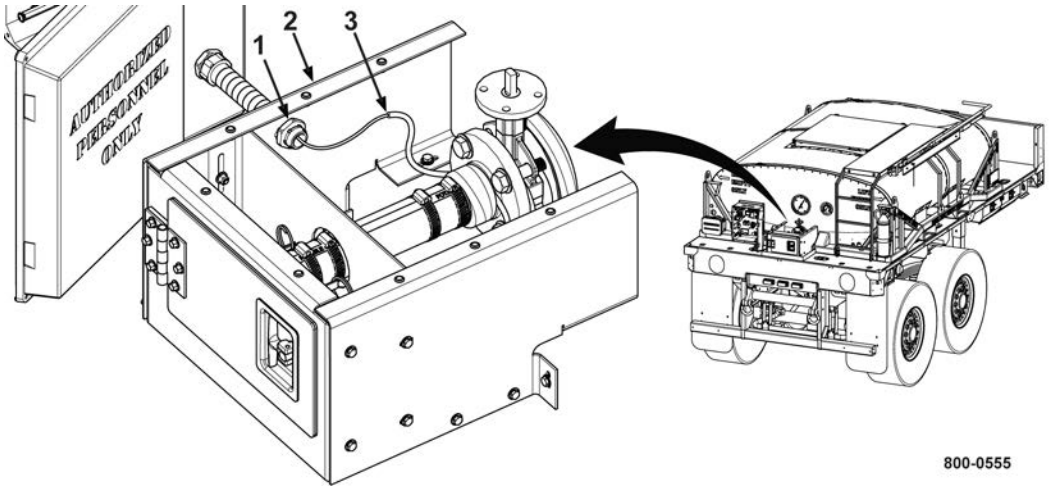


Figure 14. Electrical Connections Installation.

13. Inside the electrical control box (Figure 15, Item 1), connect green wire 1EW3 (Figure 15, Item 2) to ground terminal lug (Figure 15, Item 3).

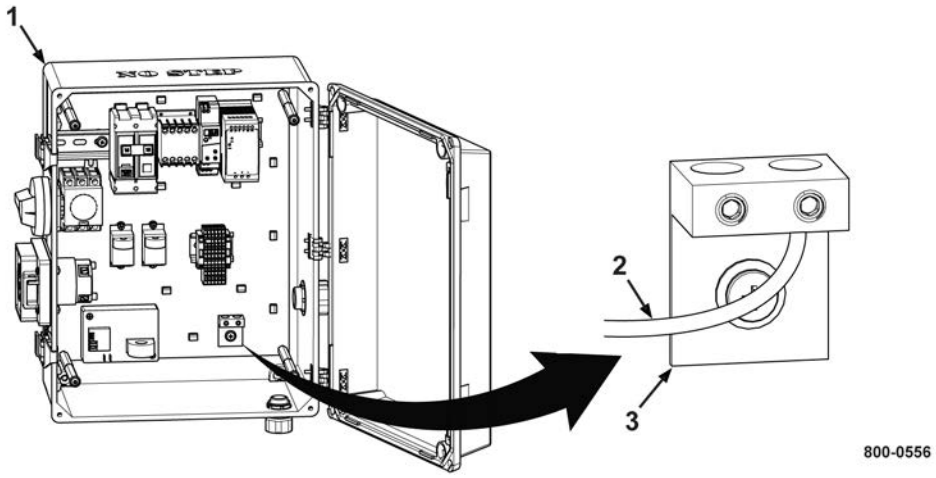


Figure 15. Wire 1EW3 Installation.

INSTALLATION - Continued

14. Install white wire 1EW1 (Figure 16, Item 1) through heat trace current sensor (Figure 16, Item 2).
15. Connect wires 1EW1, 1AW2A, and W3 (Figure 16, Item 3) to the number 3 terminal of heat trace toggle switch (Figure 16, Item 4).

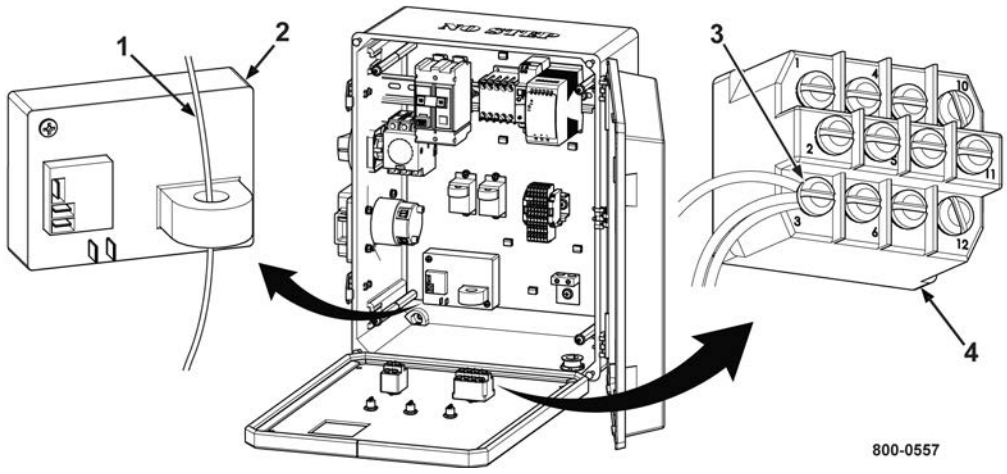


Figure 16. Wire 1EW1 Installation.

16. Place a small flat tip screwdriver into square opening (Figure 17, Item 1) in orange terminal block, push screwdriver into opening (Figure 17, Item 2) and install black wire 1EW2 (Figure 17, Item 2).

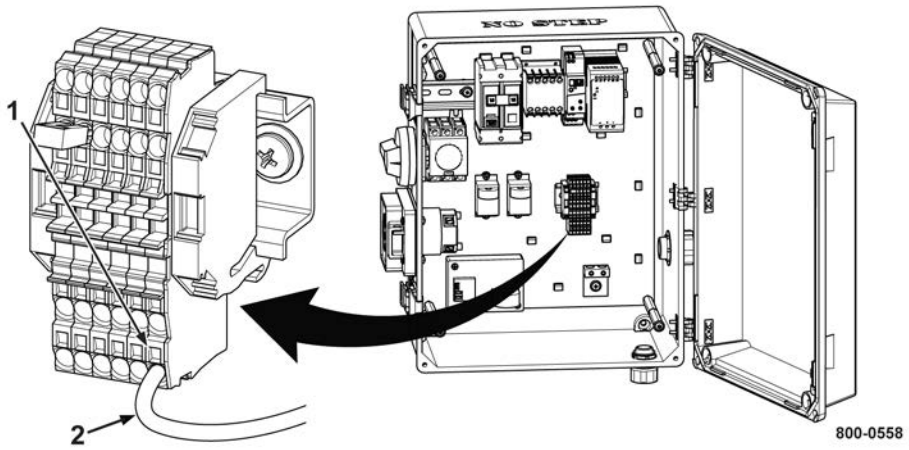


Figure 17. Wire 1EW2 Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Electrical Control Box Front Panel (WP 0125).
2. Operation Check Heat Trace 12 VDC Temperature Protection Controls (WP 0010).
3. Install Discharge Box Wool Insulation (WP 0135).

FOLLOW-ON MAINTENANCE - Continued

4. Install Discharge Box Lid (WP 0145).
5. Install Main Dispensing Valve Shaft Cover (WP 0144).
6. Install Main Dispensing Handle/Lock Plate (WP 0136).
7. Fill Water Tank (WP 0005).
8. Stow Trailer Ladder (WP 0006)

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE HOSE EXTENSION ASSEMBLY REPAIR

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Vise, Machinist's 4 in. (WP 0191, Table 1, Item 13)
- Wrench, Pipe 18 in. (WP 0191, Table 1, Item 16)

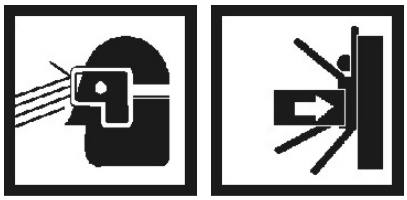
Materials/Parts
- Tape Thread Sealant (WP 0190, Table 1, Item 14)

References
- WP 0062
- WP 0177, Figure 23
- WP 0178, Figure 24

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
- Water Tank Drained (WP 0005)
- Main Dispensing Handle/Lock Plate Removed (WP 0136)
- Main Dispensing Valve Shaft Cover Removed (WP 0144)
- Discharge Box Lid Removed (WP 0145)
- Discharge Box Wool Insulation Removed (WP 0135)
- Main Dispensing Valve Removed (WP 0137)
- Discharge Box Hard Foam Insulation Removed (WP 0142)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE

For replacement of Split Ring and Lanyard refer to (WP 0062).

This work package covers:

Removal, Disassembly, Assembly, and Installation of Discharge Hose Extension Assembly.

REMOVAL

1. Loosen two hose clamps (Figure 1, Items 1,2).
2. Remove female quick disconnect (Figure 1, Item 3) from discharge hose extension (Figure 1, Item 4) then remove hose clamps (Figure 1, Items 1,2).

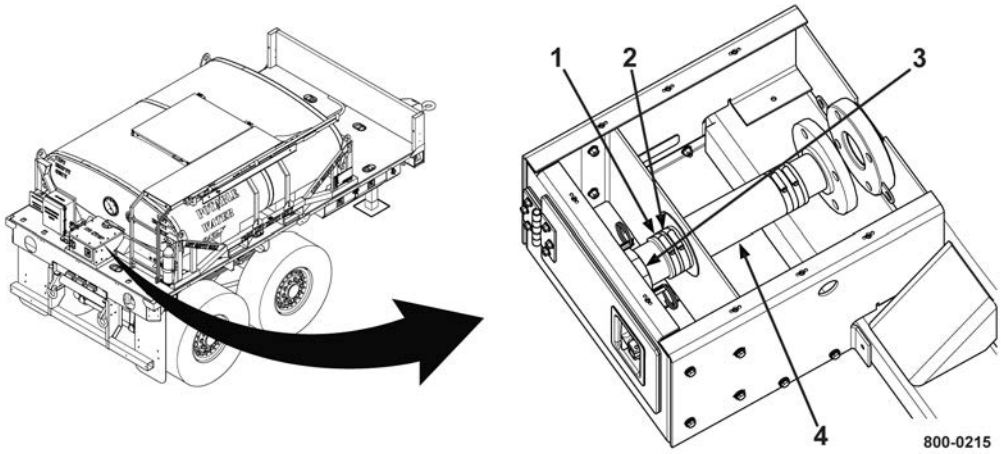


Figure 1. Female Quick Disconnect Removal.

3. Slide discharge hose extension (Figure 2, Item 1) and hose grommet (Figure 2, Item 2) toward water tank (Figure 2, Item 3) until free from discharge box inner panel (Figure 2, Item 4).

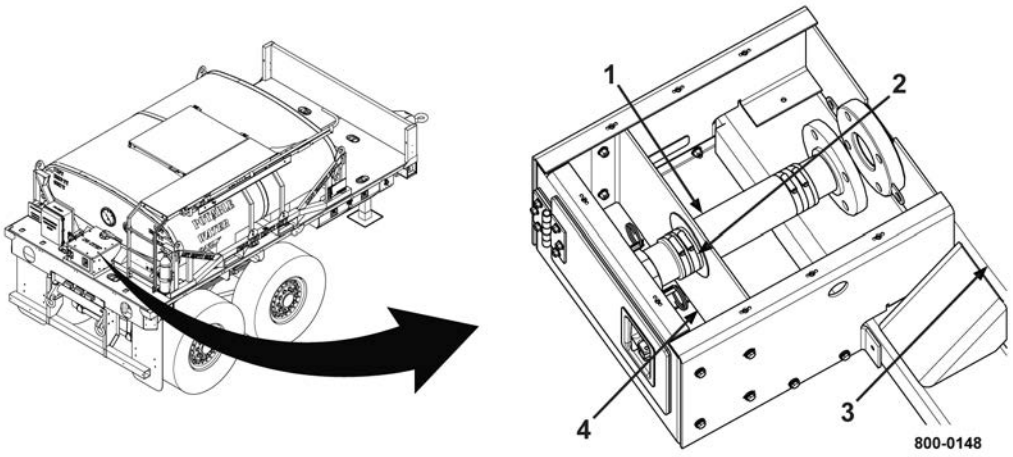


Figure 2. Discharge Hose Extension Assembly Removal.

END OF TASK

DISASSEMBLY

WARNING

- Hose ends may contain sharp wire. Handle with caution.
- Failure to comply may cause injury to personnel.

1. Remove hose grommet (Figure 3, Item 1) from discharge hose extension (Figure 3, Item 2).
2. Loosen two hose clamps (Figure 3, Items 3,4).
3. Remove threaded hose barb (Figure 3, Item 5) from discharge hose extension (Figure 3, Item 2) then remove hose clamps (Figure 3, Items 3,4).
4. Place flange (Figure 3, Item 6) in machinist vise and remove threaded hose barb (Figure 3, Item 5) from flange.

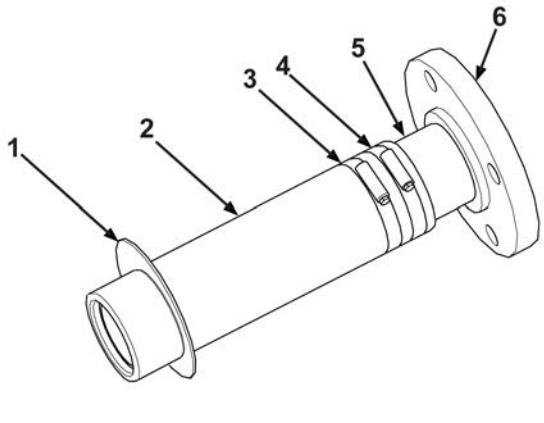


Figure 3. Discharge Hose Extension Assembly Disassembly.

END OF TASK

ASSEMBLY

NOTE

Ensure threads inside flange and on threaded hose barb are clean and free of debris before assembling.

1. Place flange (Figure 4, Item 1) in machinist vise.
2. Place a thin layer of tape thread sealant onto first four threads of discharge hose barb (Figure 4, Item 2).
3. Install threaded hose barb (Figure 4, Item 2) into exterior painted side of flange (Figure 4, Item 1) and tighten firmly.
4. Place two hose clamps (Figure 4, Items 3,4) onto end of discharge hose extension (Figure 4, Item 5).
5. Slide discharge hose extension (Figure 4, Item 5) onto threaded hose barb (Figure 4, Item 2).
6. Position hose clamp (Figure 4, Item 3) approximately 1/4 in. (6.35 mm) from end of discharge hose extension (Figure 4, Item 5).
7. Place second hose clamp (Figure 4, Item 4) approximately 1/2 in. (12.7 mm) from first hose clamp (Figure 4, Item 3).
8. Tighten both hose clamps (Figure 4, Items 3,4) firmly.
9. Slide hose grommet (Figure 4, Item 6) onto discharge hose extension (Figure 4, Item 5).

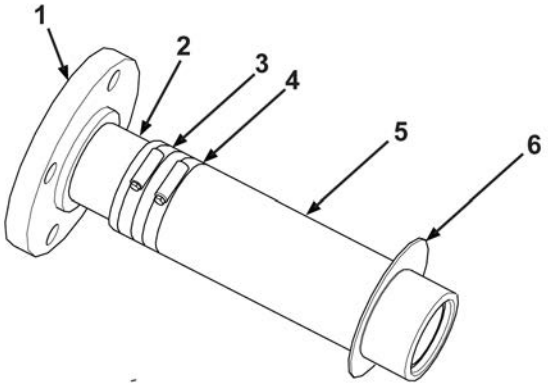


Figure 4. Discharge Hose Extension Assembly.

END OF TASK

INSTALLATION

1. Slide discharge hose extension (Figure 5, Item 1) into discharge box inner panel (Figure 5, Item 2) with flange (Figure 5, Item 3) facing water tank (Figure 5, Item 4).
2. Install hose grommet (Figure 5, Item 5) onto discharge box inner panel (Figure 5, Item 2).

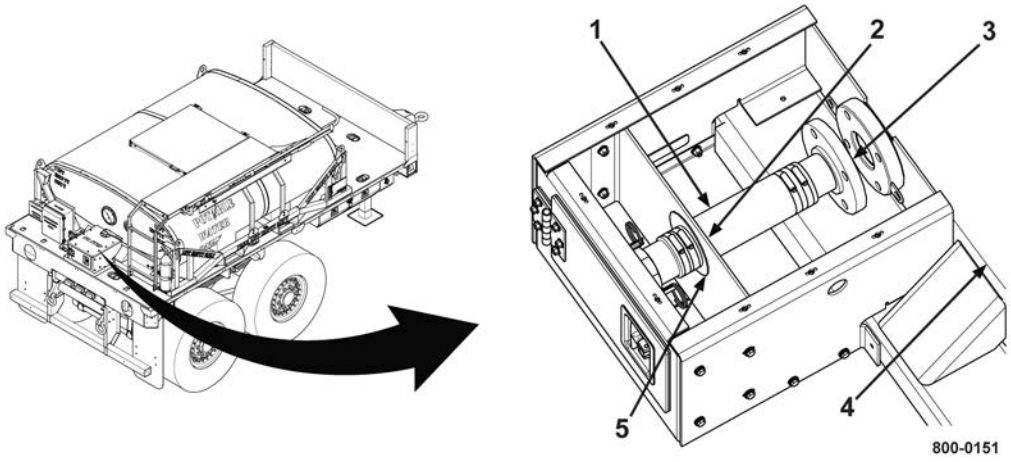


Figure 5. Hose Extension Installation.

3. Place two hose clamps (Figure 6, Items 1,2) onto discharge hose extension (Figure 6, Item 3).
4. Install female quick disconnect (Figure 6, Item 4) into discharge hose extension (Figure 6, Item 3).
5. Position hose clamp (Figure 6, Item 1) approximately 1/4 in. (6.35 mm) from end of discharge hose extension (Figure 6, Item 4).
6. Place second hose clamp (Figure 6, Item 2) approximately 1/2 in. (12.7 mm) from first hose clamp (Figure 6, Item 1).
7. Tighten both hose clamps (Figure 6, Items 1,2) firmly.

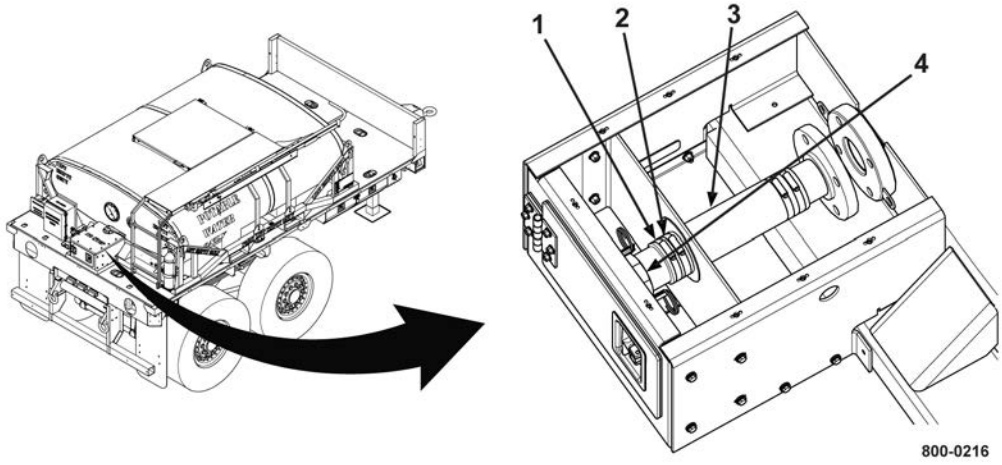


Figure 6. Hose Clamp Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

NOTE

Once main dispensing valve assembly is installed check for leaks before proceeding with additional follow-on maintenance.

1. Install Discharge Box Hard Foam Insulation (WP 0142).
2. Install Main Dispensing Valve (WP 0137).
3. Install Discharge Box Wool Insulation (WP 0135).
4. Install Discharge Box Lid (WP 0145).
5. Install Main Dispensing Valve Shaft Cover (WP 0144).
6. Install Main Dispensing Handle/Lock Plate (WP 0136).
7. Fill Water Tank (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX ASSEMBLY REPAIR

INITIAL SETUP:

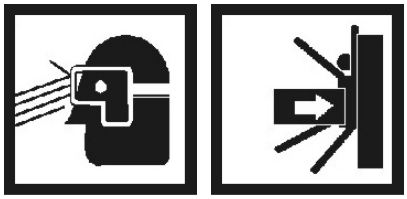
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Adhesive, 221B (WP 0190, Table 1, Item 2)
Lock Washer Qty: 4 (WP 0178, Figure 24, Item 2)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Water Tank Drained (WP 0005)

Equipment Condition (cont.)
Main Dispensing Handle/Lock Plate Removed (WP 0136)
Main Dispensing Valve Shaft Cover Removed (WP 0144)
Discharge Box Lid Removed (WP 0145)
Conduit Outlet Heater Removed (WP 0110)
Main Dispensing Valve Removed (WP 0137)
Discharge Hose Extension Assembly Removed (WP 0139)
Discharge Box Hard Foam Insulation Removed (WP 0142)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Discharge Box Assembly.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), flat washers (Figure 1, Item 2), and lock washers (Figure 1, Item 3) (discard lock washers).
2. Cut away sealant (Figure 1, Item 4) between discharge box (Figure 1, Item 5) and water tank frame (Figure 1, Item 6) then remove discharge box.

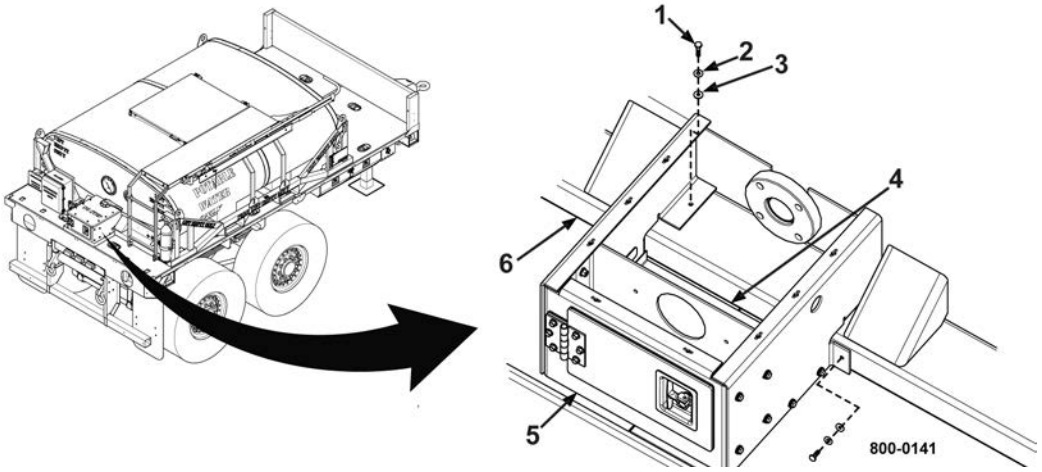


Figure 1. Discharge Box Assembly Repair.

END OF TASK

DISASSEMBLY

1. Remove discharge box inner panel (WP 0141).
2. Remove discharge box bottom panel (WP 0143).
3. Remove discharge box front panel (WP 0146).

END OF TASK

ASSEMBLY

1. Install discharge box front panel (WP 0146).
2. Install discharge box bottom panel (WP 0143).
3. Install discharge box inner panel (WP 0141).

END OF TASK

INSTALLATION

1. Align discharge box (Figure 1, Item 5) onto water tank frame (Figure 1, Item 6).

NOTE

Ensure discharge box lid aligns with mounting holes of discharge box before completing step 2.

2. Install four bolts (Figure 1, Item 1), flat washers (Figure 1, Item 2), and new lock washers (Figure 1, Item 3). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Discharge Hard Foam Insulation (WP 0142).
2. Install Discharge Hose Extension Assembly (WP 0139).
3. Install Main Dispensing Valve (WP 0137).
4. Install Conduit Outlet Heater (WP 0110).
5. Install Discharge Box Lid (WP 0145).
6. Install Main Dispensing Valve Shaft Cover (WP 0144).
7. Install Main Dispensing Handle/Lock Plate (WP 0136).
8. Fill Water Tank (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX INNER PANEL REPLACEMENT

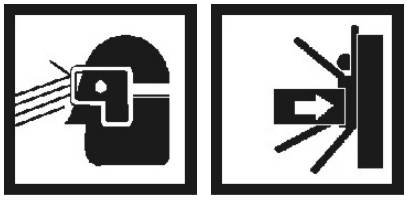
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Discharge Box Assembly Removed (WP 0140)

Materials/Parts
Adhesive, 221B (WP 0190, Table 1, Item 2)
Locknut, Nylon Insert Qty: 4 (WP 0178, Figure 24, Item 34, 38)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Discharge Box Inner Panel.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), eight flat washers (Figure 1, Item 2), and four locknuts (Figure 1, Item 3) (discard locknuts) that connect discharge box inner panel (Figure 1, Item 4) to side panel (Figure 1, Item 5).
2. Remove adhesive around edge of discharge box inner panel (Figure 1, Item 4).
3. Remove discharge box inner panel (Figure 1, Item 4) from discharge box.

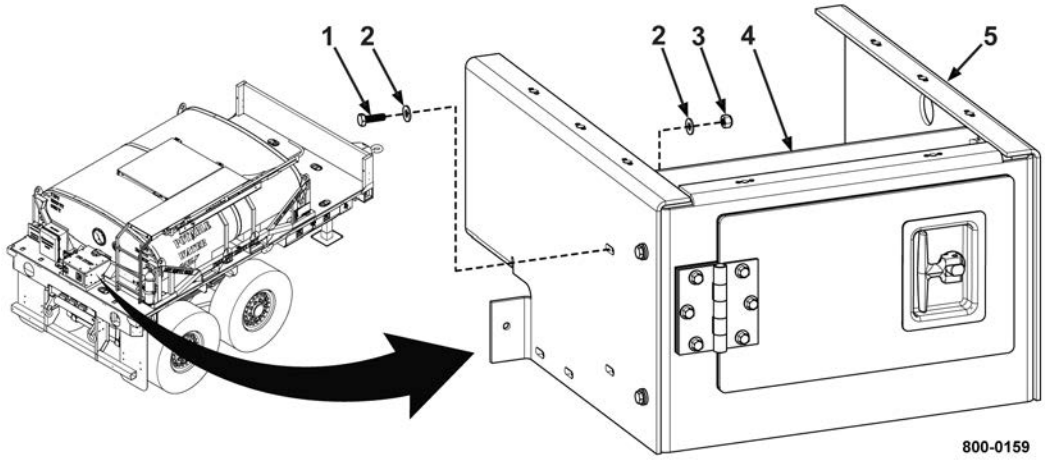


Figure 1. Discharge Box Inner Panel Removal.

END OF TASK

DISASSEMBLY

Remove inner wall trim (Figure 2, Item 1) from discharge box inner panel (Figure 2, Item 2).

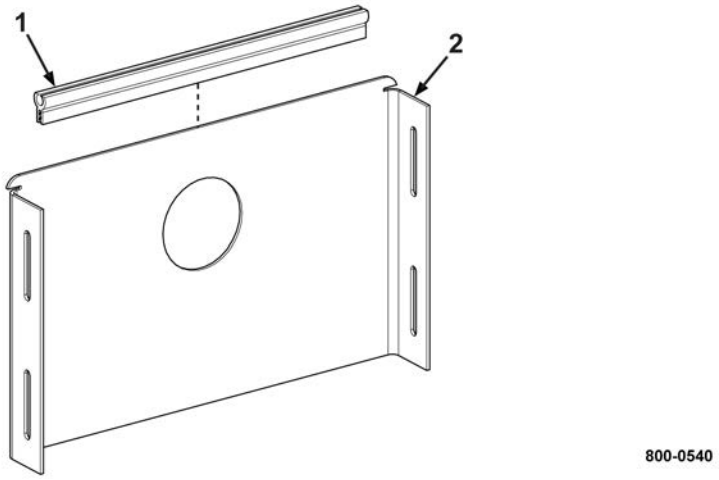


Figure 2. Inner Wall Trim Replacement.

END OF TASK

ASSEMBLY

Install inner wall trim (Figure 2, Item 1) onto discharge box inner panel (Figure 2, Item 2).

END OF TASK

INSTALLATION

NOTE

Ensure surface area is clean of adhesive before re-installing.

1. Install discharge box inner panel (Figure 3, Item 4) onto side panels (Figure 3, Item 5) with mounting tabs (Figure 3, Item 6) towards access door (Figure 3, Item 7).
2. Install four bolts (Figure 3, Item 1), eight flat washers (Figure 3, Item 2), and four new locknuts (Figure 3, Item 3) that connect discharge box inner panel (Figure 3, Item 4) to side panel (Figure 1, Item 5), tighten locknuts.
3. Apply adhesive to sides and bottom of discharge box inner panel (Figure 3, item 4).

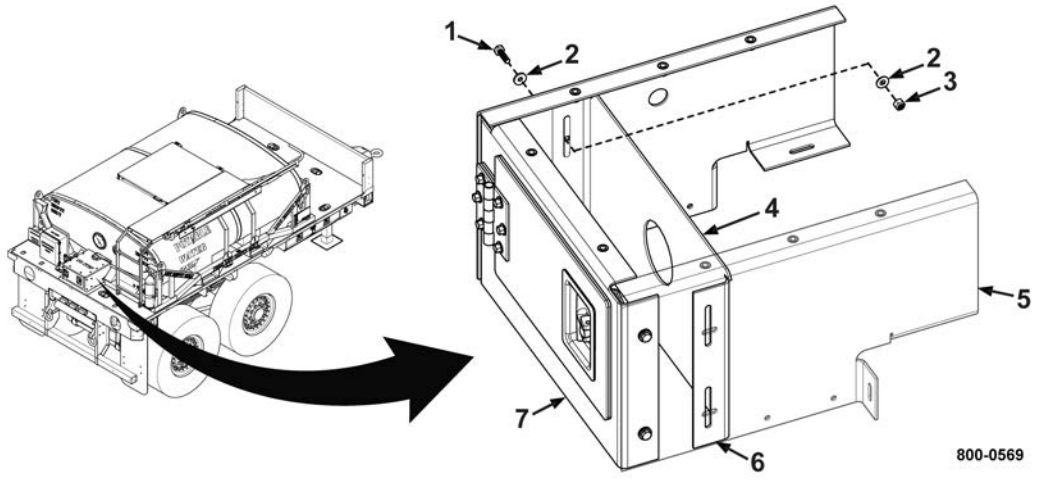


Figure 3. Discharge Box Inner Panel Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Discharge Box Assembly (WP 0140).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX HARD FOAM INSULATION REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

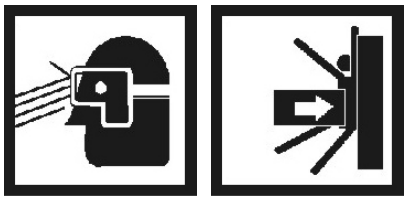
Materials/Parts
2 in. Aluminum Tape (WP 0190, Table 1, Item 1)

References
WP 0178, Figure 24

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Main Dispensing Handle/Lock Plate Removed (WP 0136)
Main Dispensing Valve Shaft Cover Removed (WP 0144)
Discharge Box Lid Removed (WP 0145)
Discharge Box Wool Insulation Removed (WP 0135)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Hard Foam Insulation.

REMOVAL

NOTE

Hard foam insulation can be reused, use care when removing. Ensure foam insulation pieces are marked before removing.

1. Cut 2 in. aluminum tape as needed to free pieces of hard foam insulation (Figure 1, Item 1).
2. Remove hard foam insulation (Figure 1, Item 1) from inside discharge box (Figure 1, Item 2).

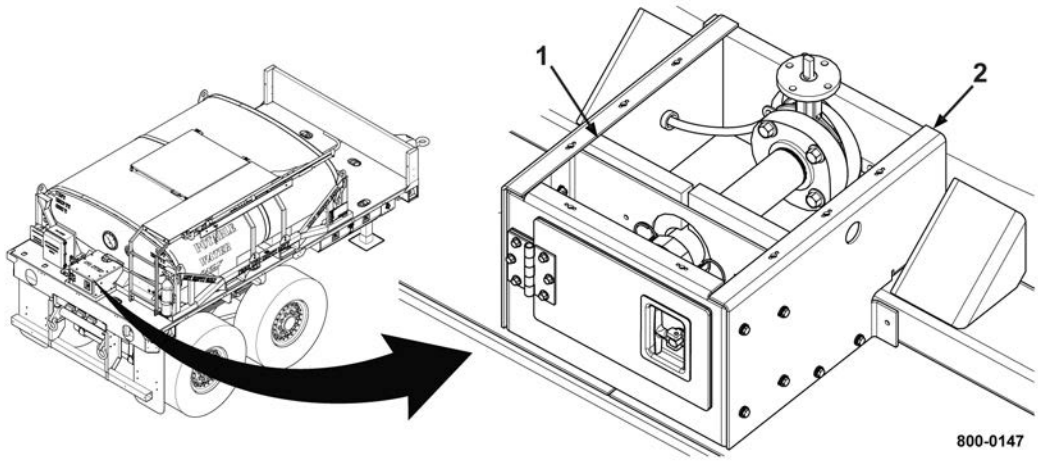


Figure 1. Discharge Box Hard Foam Insulation.

END OF TASK

INSTALLATION

NOTE

If installing new hard foam insulation, cut to fit as needed.

1. Replace hard foam insulation (Figure 1, Item 1) into discharge box (Figure 1, Item 2).
2. Tape joints and corners as needed to keep hard foam insulation (Figure 1, Item 1) in place.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Discharge Box Wool Insulation (WP 0135).
2. Install Discharge Box Lid (WP 0145).
3. Install Main Dispensing Valve Shaft Cover (WP 0144).
4. Install Main Dispensing Handle/Lock Plate (WP 0136).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX BOTTOM PANEL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Discharge Box Assembly Removed (WP 0140)

Materials/Parts
Adhesive, 221B (WP 0190, Table 1, Item 2)
Locknut, Nylon Insert Qty: 4 (WP 0178, Figure 24, Item 34, 38)

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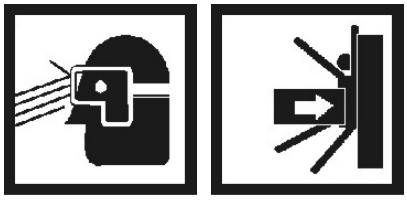

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Bottom Panel.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), eight flat washers (Figure 1, Item 2), and four locknuts (Figure 1, Item 3) (discard locknuts) that connect side panel (Figure 1, Item 4) to discharge box bottom panel (Figure 1, Item 5).
2. Remove adhesive along side and front edges of discharge box bottom panel (Figure 1, Item 5), then remove discharge box bottom panel from discharge box side panels (Figure 1, Item 4).

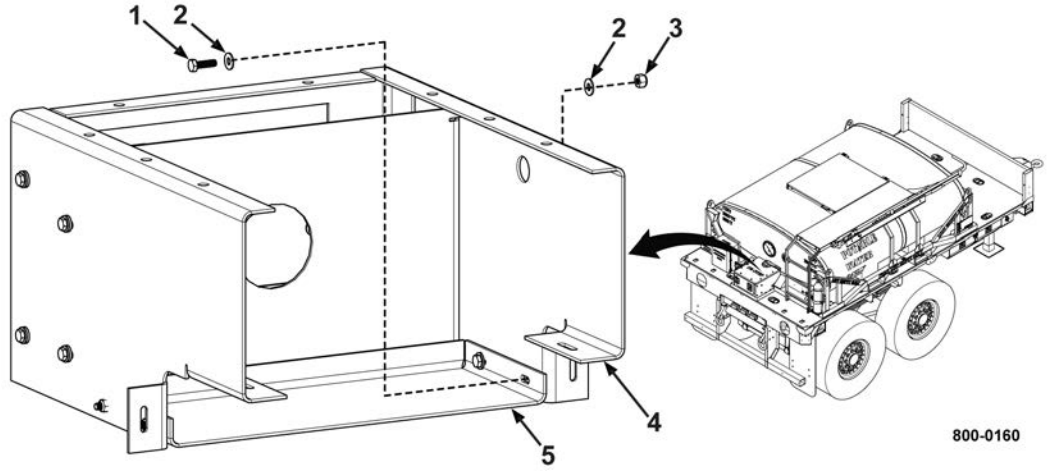

Figure 1. Discharge Box Bottom Panel Replacement.

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END OF TASK

INSTALLATION

1. Align discharge box bottom panel (Figure 1, Item 5) between the discharge box side panels (Figure 1, Item 4).
2. Install four bolts (Figure 1, Item 1), eight flat washers (Figure 1, Item 2), and four new locknuts (Figure 1, Item 3) that connect side panel (Figure 1, Item 4) to discharge box bottom panel (Figure 1, Item 5).

NOTE

Ensure surface is clean and serviceable before completing step 3.

3. Apply adhesive along side and front edge of discharge box bottom panel (Figure 1, Item 5).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Discharge Box Assembly (WP 0140).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
MAIN DISPENSING VALVE SHAFT COVER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Main Dispensing Handle/Lock Plate Removed (WP 0136)

References
WP 0178, Figure 24

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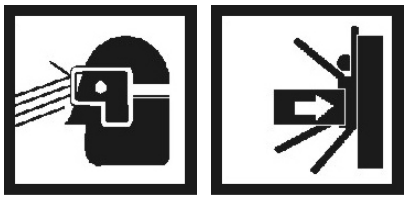

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Main Dispensing Valve Shaft Cover.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), flat washers (Figure 1, Item 2), and neoprene washers (Figure 1, Item 3) from main dispensing valve shaft covers (Figure 1, Item 4).
2. Remove two main dispensing valve shaft covers (Figure 1, Item 4), top valve shaft cover gaskets (Figure 1, Item 5), and bottom valve shaft cover gasket (Figure 1, Item 6) from discharge box lid (Figure 1, Item 7).

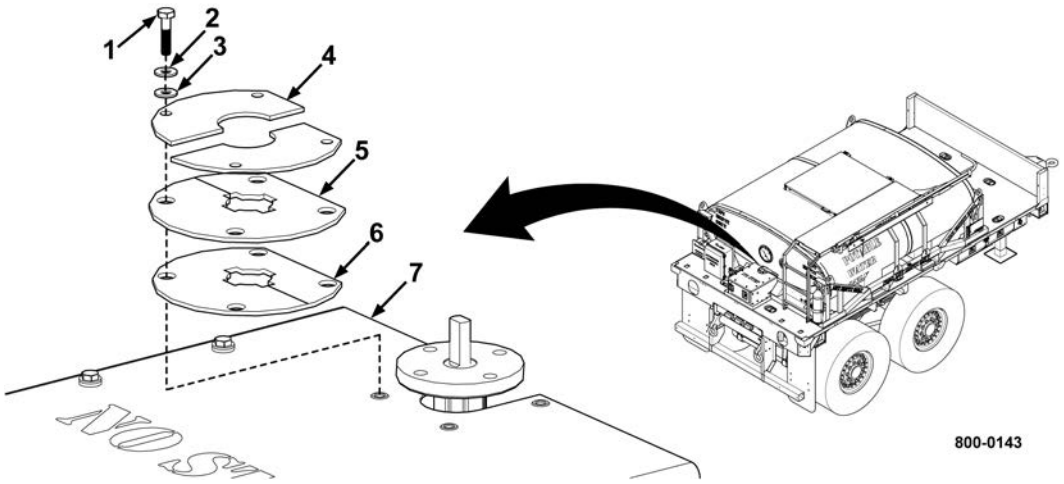

Figure 1. Main Dispensing Valve Shaft Cover Removal.

END OF TASK

INSTALLATION

NOTE

Ensure openings in valve shaft cover gaskets face opposite directions.

1. Place smaller bottom valve shaft cover gasket (Figure 2, Item 6) onto discharge box lid (Figure 2, Item 7) with straight edge of gasket towards water tank (Figure 2, Item 8).
2. Place larger top valve shaft cover gasket (Figure 2, Item 5) on top of bottom valve shaft cover gasket (Figure 2, Item 6).
3. Place both main dispensing valve shaft covers (Figure 2, Item 4) onto valve shaft cover gaskets (Figure 2, Items 5 and 6) with straight edge of main dispensing valve shaft covers towards water tank (Figure 2, Item 8).
4. Install four bolts (Figure 2, Item 1), flat washers (Figure 2, Item 2), and neoprene washers (Figure 2, Item 3). Tighten.

INSTALLATION - Continued

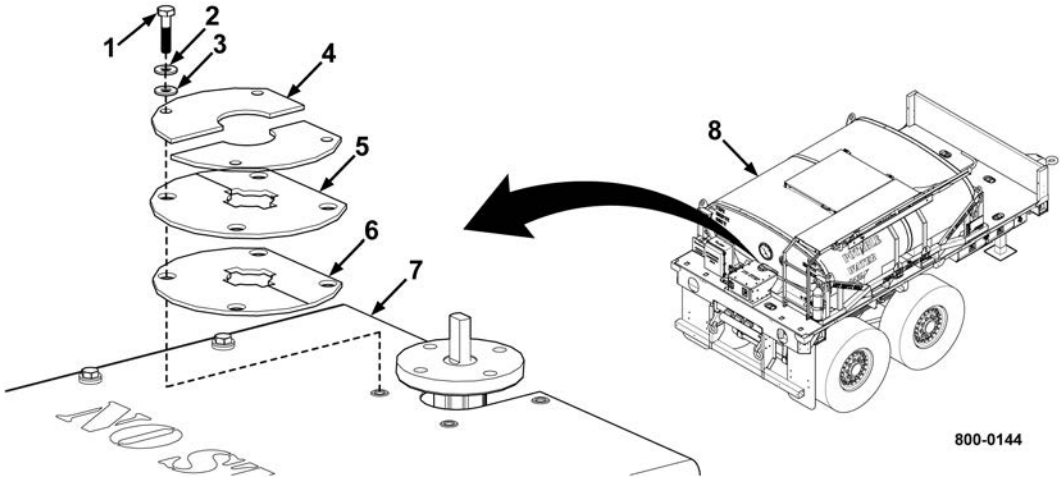

Figure 2. Main Dispensing Valve Shaft Cover Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Install Main Dispensing Handle/Lock Plate (WP 0136).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX LID ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Wrench, Torque, Click, Ratcheting, 1/4 in. Drive, 30 lb-in. (WP 0191, Table 1, Item 17)

References
- WP 0178, Figure 24

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
- Main Dispensing Handle/Lock Plate Removed (WP 0136)
- Main Dispensing Valve Shaft Cover Removed (WP 0144)
- Trailer Ladder Deployed (WP 0006)

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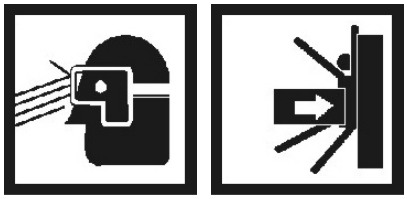

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on or in the water tank.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Lid Assembly.

REMOVAL

1. Remove eight bolts (Figure 1, Item 1), washers (Figure 1, Item 2), and neoprene washers (Figure 1, Item 3).
2. Pull discharge box lid (Figure 1, Item 7) slightly away from end cap (Figure 1, Item 5) of water tank and remove seal (Figure 1, Item 4) along back edge of discharge box lid (Figure 1, Item 7).
3. Remove discharge box lid (Figure 1, Item 7) from discharge box (Figure 1, Item 6).

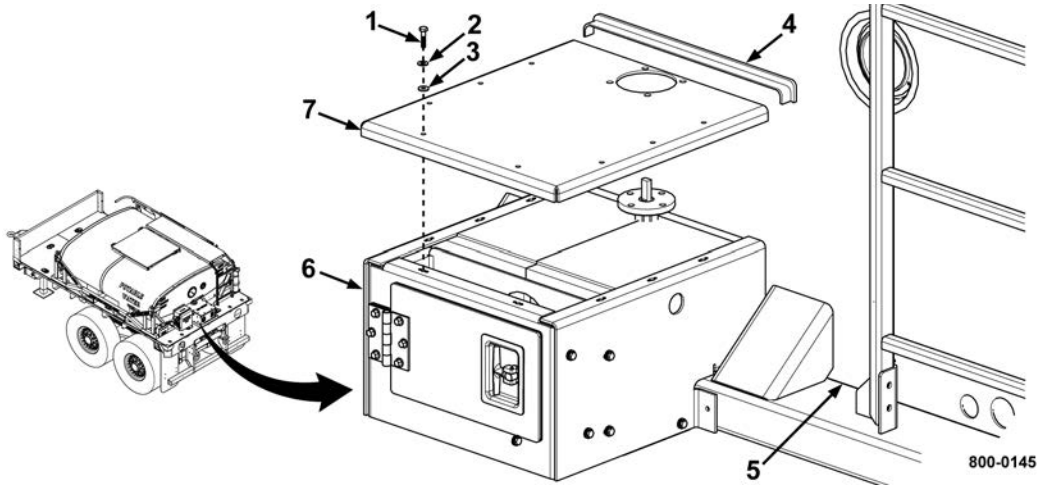

Figure 1. Discharge Box Lid Assembly Replacement.

END OF TASK

INSTALLATION

1. Place the discharge box lid seal (Figure 1, Item 4) along the back edge of the discharge box (Figure 1, Item 6).
2. Place discharge box lid (Figure 1, Item 7) onto discharge box (Figure 1, Item 6), slightly away from end cap (Figure 1, Item 5).
3. Install discharge box lid seal (Figure 1, Item 4) along back edge of discharge box lid (Figure 1, Item 7).
4. Press discharge box lid (Figure 1, Item 7) firmly against water tank end cap (Figure 1, Item 5), install eight bolts (Figure 1, Item 1), flat washers (Figure 1, Item 2), and neoprene washers (Figure 1, Item 3).
5. Torque each bolt to 30 lb-in. (3.38 N•m).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Stow Trailer Ladder (WP 0006).
2. Install Main Dispensing Valve Shaft Cover (WP 0144).
3. Install Main Dispensing Handle/Lock Plate (WP 0136).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX FRONT PANEL ASSEMBLY REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Nylon Insert Qty: 4 (WP 0178, Figure 24, Item 34, 38)

References
WP 0147

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Main Dispensing Handle/Lock Plate Removed (WP 0136)
Main Dispensing Valve Shaft Cover Removed (WP 0144)
Discharge Box Lid Removed (WP 0145)

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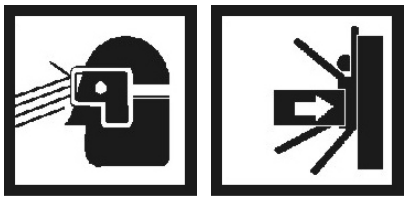

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Discharge Box Front Panel Assembly.

REMOVAL

1. Remove four bolts (Figure 1, Item 1), eight flat washers (Figure 1, Item 2), and four locknuts (Figure 1, Item 3) (discard locknuts) that connect discharge box front panel assembly (Figure 1, Item 4) to side panels (Figure 1, Item 5).
2. Remove discharge box front panel assembly (Figure 1, Item 4).

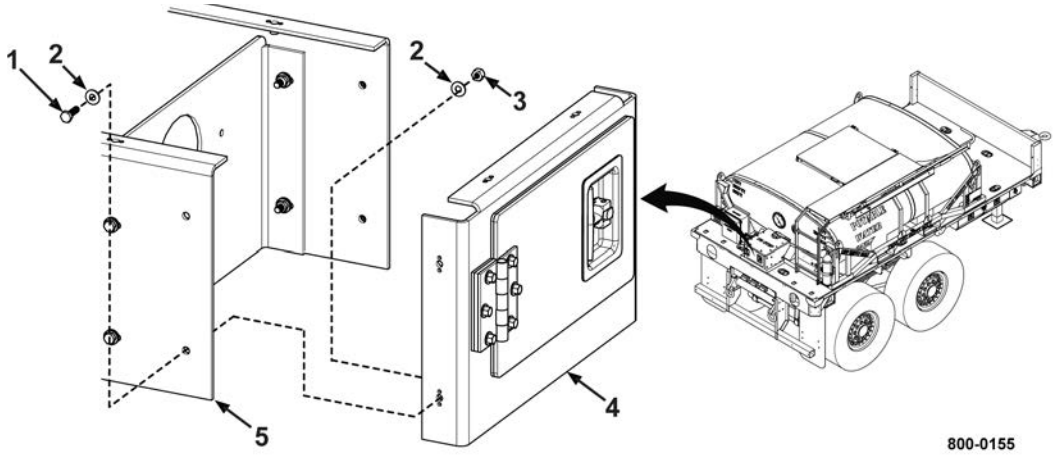

Figure 1. Discharge Box Front Panel Assembly Replacement.

END OF TASK

DISASSEMBLY

Remove Discharge Box Access Door Hinge (WP 0147).

END OF TASK

ASSEMBLY

Install Discharge Box Access Door Hinge (WP 0147).

END OF TASK

INSTALLATION

1. Align discharge box front panel assembly (Figure 1, Item 4) with discharge box side panels (Figure 1, Item 5).
2. Install four bolts (Figure 1, Item 1), eight flat washers (Figure 1, Item 2), and four new locknuts (Figure 1, Item 3) that connect discharge box front panel assembly (Figure 1, Item 4) to side panels (Figure 1, Item 5). Tighten firmly.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Discharge Box Lid (WP 0145).

FOLLOW-ON MAINTENANCE - Continued

2. Install Main Dispensing Valve Shaft Cover (WP 0144).
3. Install Main Dispensing Handle/Lock Plate (WP 0136).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX ACCESS DOOR HINGE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)
Discharge Box Access Door Removed (WP 0148)

Materials/Parts
Locknut, Nylon Insert Qty: 3 (WP 0178, Figure 24, Item 30)

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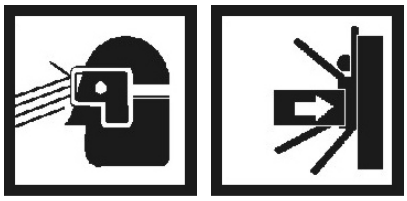

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Access Door Hinge.

REMOVAL

Remove three locknuts (Figure 1, Item 1) (discard locknuts), six flat washers (Figure 1, Item 2), three bolts (Figure 1, Item 3), discharge box access door hinge (Figure 1, Item 4), and spacer (Figure 1, Item 5).

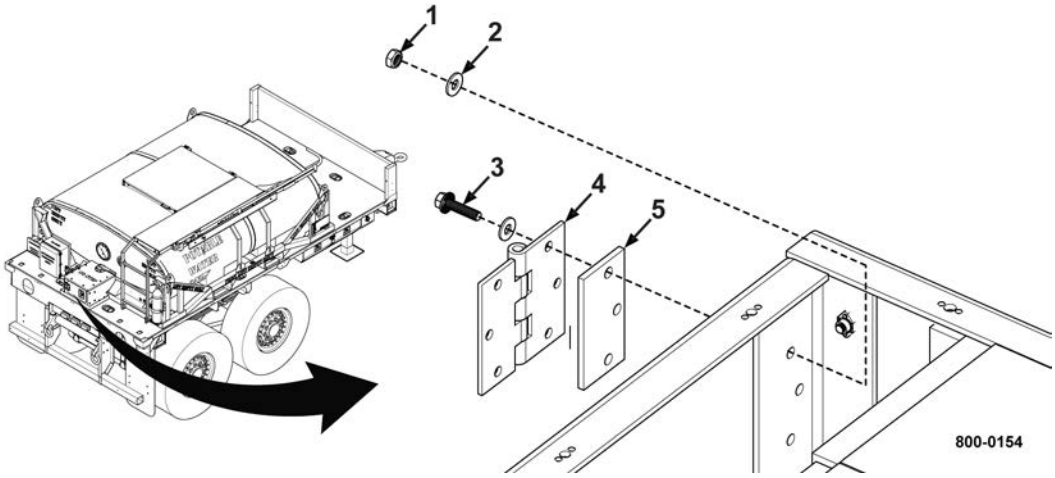

Figure 1. Discharge Box Access Door Hinge Replacement.

END OF TASK

INSTALLATION

1. Align spacer (Figure 1, Item 5) behind discharge box access door hinge (Figure 1, Item 4).
2. Install three bolts (Figure 1, Item 3), six flat washers (Figure 1, Item 2), and three new locknuts (Figure 1, Item 1).

END OF TASK

FOLLOW-ON MAINTENANCE

Install Discharge Box Access Door (WP 0148).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX ACCESS DOOR ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut, Nylon Insert Qty: 3 (WP 0178, Figure 24, Item 30)

References
WP 0149

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

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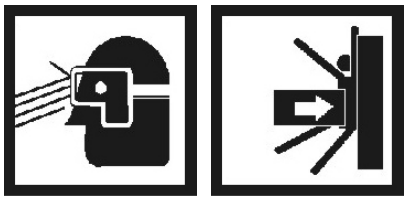

- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal, Disassembly, Assembly, and Installation of Discharge Box Access Door Assembly.

REMOVAL

Open discharge box access door (Figure 1, Item 1) and remove three locknuts (Figure 1, Item 2) (discard locknuts), six flat washers (Figure 1, Item 3), and three bolts (Figure 1, Item 4).

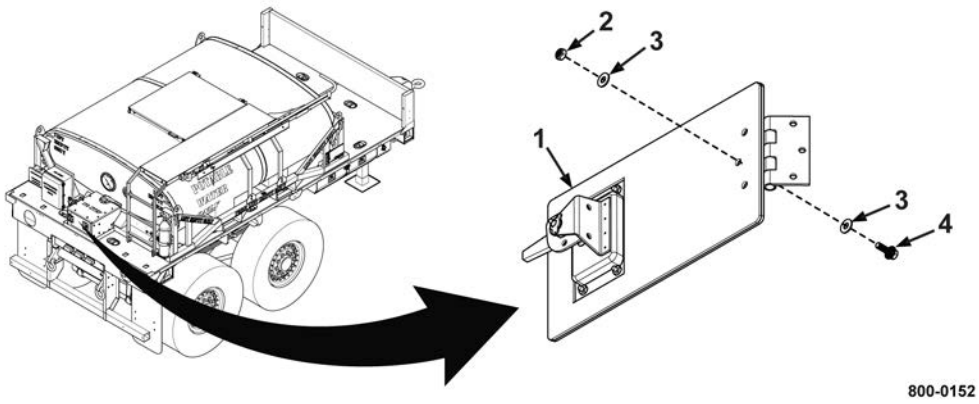

Figure 1. Discharge Box Access Door Assembly.

END OF TASK

DISASSEMBLY

Remove Discharge Box Access Door Handle Assembly (WP 0149).

END OF TASK

ASSEMBLY

Install Discharge Box Access Door Handle Assembly (WP 0149).

END OF TASK

INSTALLATION

1. Align discharge box access door hinge (Figure 2, Item 5) to outside of discharge box access door (Figure 2, Item 1).
2. Install three bolts (Figure 2, Item 4), six flat washers (Figure 2, Item 3), and three new locknuts (Figure 2, Item 2). Tighten firmly.
3. Close and secure discharge box access door (Figure 2, Item 1).

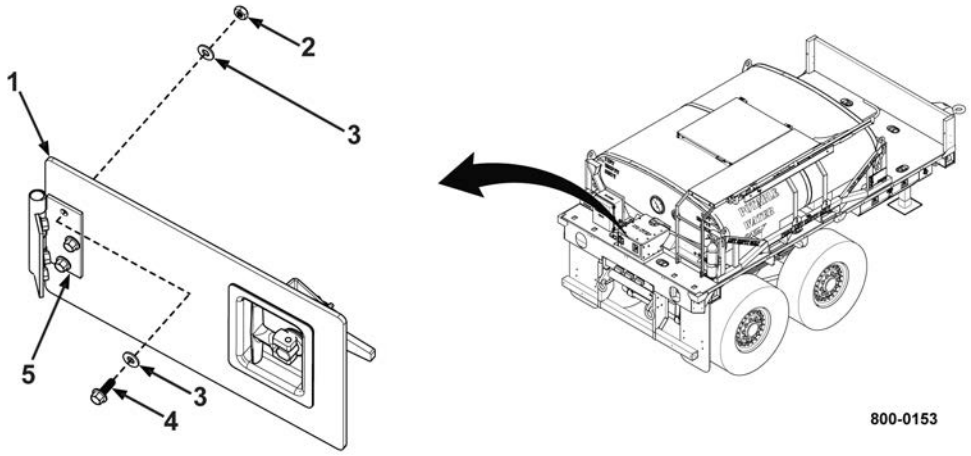

Figure 2. Discharge Box Access Door Assembly Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX ACCESS DOOR HANDLE ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

References
WP 0178, Figure 24

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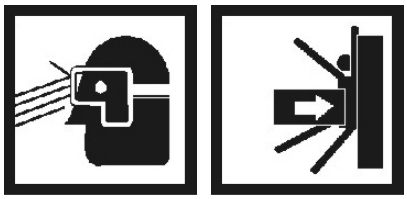


- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Access Door Handle Assembly.

REMOVAL

Remove four nuts (Figure 1, Item 1) and washers (Figure 1, Item 2) from discharge box door (Figure 1, Item 3) and remove discharge box access door handle assembly (Figure 1, Item 4).

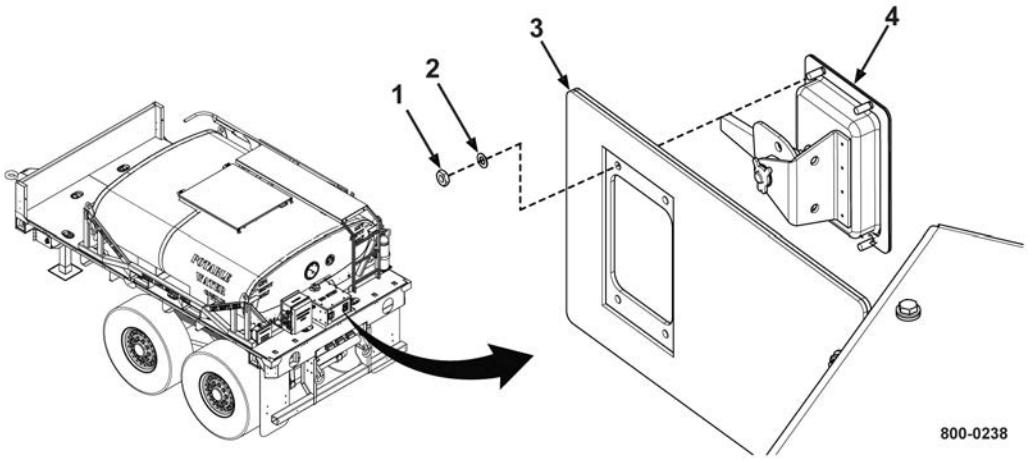


Figure 1. Discharge Box Access Door Handle Assembly Replacement.

END OF TASK

INSTALLATION

Place discharge box access door handle assembly (Figure 1, Item 4) onto discharge box door (Figure 1, Item 3) and line up holes. Install four washers (Figure 1, Item 2) and nuts (Figure 1, Item 1). Tighten nuts.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DISCHARGE BOX SIDE PANEL REPLACEMENT

INITIAL SETUP:

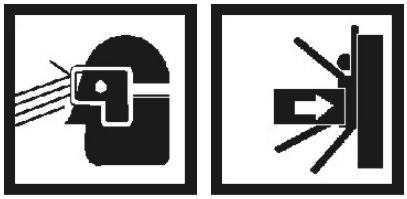
Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Materials/Parts
Locknut Qty: 4 (WP 0178, Figure 24, Item 34, 38)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Equipment Condition (cont.)
Discharge Box Assembly Removed (WP 0140)
Discharge Box Inner Panel Removed (WP 0141)
Discharge Box Bottom Panel Removed (WP 0143)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Discharge Box Side Panels.

REMOVAL

NOTE

There are two side panels, each is removed and installed the same way. The side panel on curbside of trailer is shown in this procedure.

1. Remove two bolts (Figure 1, Item 2), four flat washers (Figure 1, Item 3), and two locknuts (Figure 1, Item 4) (discard locknuts) that connect discharge box side panel (Figure 1, Item 1) to discharge box front panel (Figure 1, Item 5).
2. Remove discharge box side panel (Figure 1, Item 1).

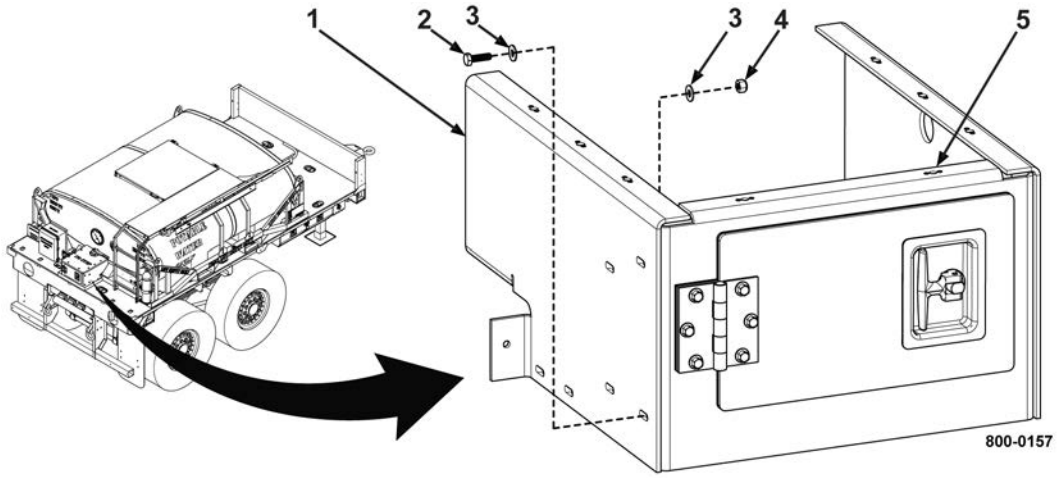


Figure 1. Discharge Box Side Panel to Front Panel Replacement.

END OF TASK

INSTALLATION

1. Align discharge box side panel (Figure 1, Item 1) to discharge box front panel (Figure 1, Item 5).
2. Install two bolts (Figure 1, Item 2), four flat washers (Figure 1, Item 3), and two new locknuts (Figure 1, Item 4) that connect discharge box side panel (Figure 1, Item 1) to discharge box front panel (Figure 1, Item 5).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install Discharge Box Assembly (WP 0140).
2. Install Discharge Box Inner Panel (WP 0141).
3. Install Discharge Box Bottom Panel (WP 0143).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
FIRE EXTINGUISHER MOUNT BRACKET ASSEMBLY REPLACEMENT

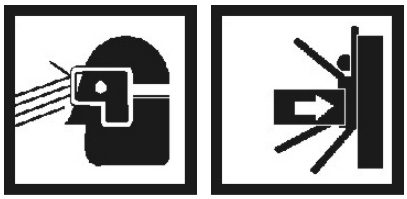
INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)

Equipment Condition
Trailer Wheels Chocked (TM 9-2330-394-13&P)

Materials/Parts
Lock Washer Qty: 3 (WP 0179, Figure 25, Item 3)

WARNING



- Wear eye protection when working on the Camel II.
- Trailer must be secure. Always chock wheels before working on the Camel II.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Removal and Installation of Fire Extinguisher Mount Bracket Assembly.

REMOVAL

1. Remove retaining pin (Figure 1, Item 1) from fire extinguisher latch bracket (Figure 1, Item 2), open latch (Figure 1, Item 3), and remove fire extinguisher (Figure 1, Item 4).
2. Remove three bolts (Figure 1, Item 5), lock washers (Figure 1, Item 6) (discard lock washer), and flat washers (Figure 1, Item 7). Remove fire extinguisher bracket (Figure 1, Item 8).

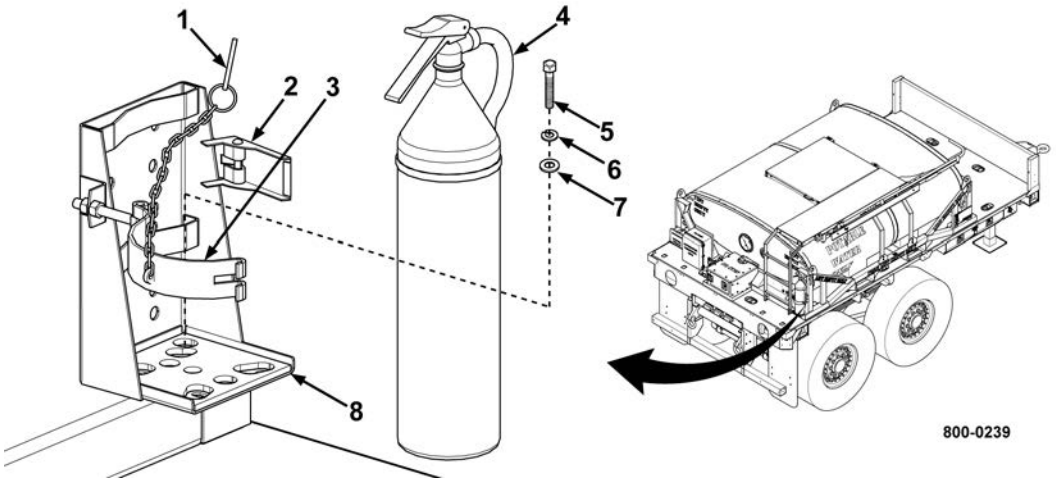


Figure 1. Fire Extinguisher Mount Bracket Removal.

END OF TASK

INSTALLATION

1. Align fire extinguisher mount bracket (Figure 2, Item 1) with mounting hole on water tank frame (Figure 2, Item 2).
2. Install three bolts (Figure 2, Item 3), new lock washers (Figure 2, Item 4), flat washers (Figure 2, Item 5), and tighten firmly.

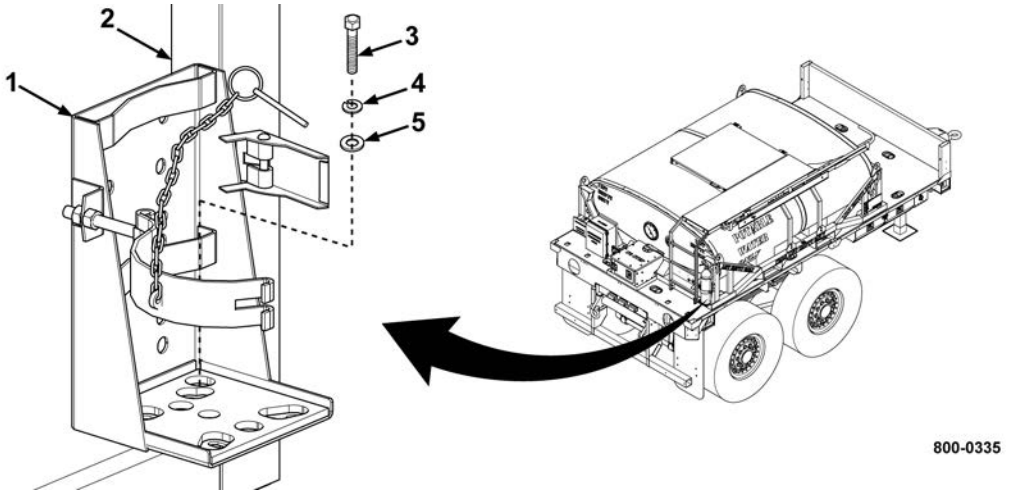


Figure 2. Fire Extinguisher Mount Bracket Installation.

INSTALLATION - Continued

END OF TASK

ADJUSTMENT

1. Place fire extinguisher (Figure 3, Item 1) in fire extinguisher mount bracket (Figure 3, Item 2).
2. Close and secure latch bracket (Figure 3, Item 3) and insert retaining pin (Figure 3, Item 4).
3. Loosen outside nut (Figure 3, Item 7) on adjusting bolt (Figure 3, Item 5).
4. Loosen or tighten inside nut (Figure 3, Item 6) as needed to create enough tension on latch bracket (Figure 3, Item 3) to hold fire extinguisher (Figure 3, Item 1) firmly in place.
5. Once proper tension is achieved, tighten outside nut (Figure 3, Item 7) firmly toward inside nut (Figure 3, Item 6).

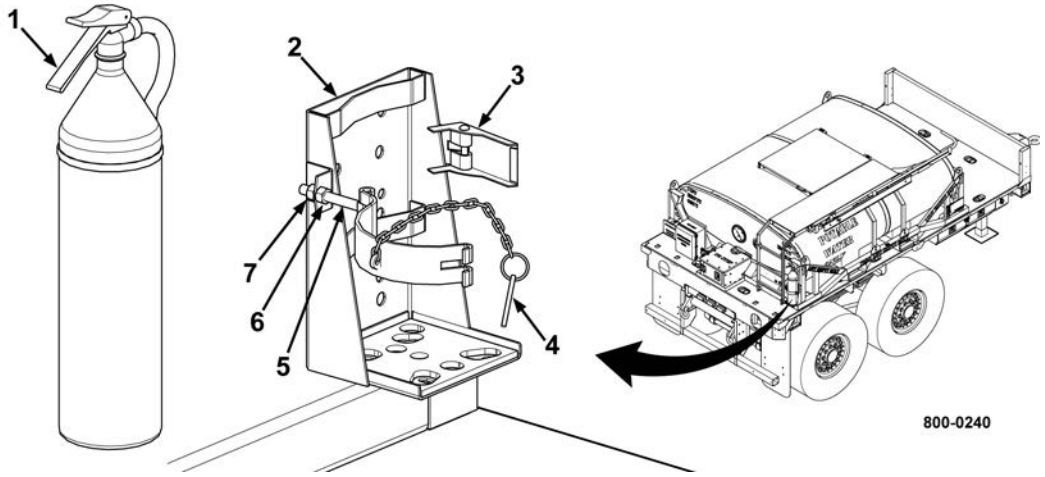


Figure 3. Fire Extinguisher Mount Bracket Adjustment.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL GENERAL MAINTENANCE INSTRUCTIONS

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0191, Table 1, Item 12)
- Crimping Tool, Terminal (WP 0191, Table 1, Item 2)
- Multi-meter (WP 0191, Table 1, Item 9)
- Screwdriver Set, Jeweler's (WP 0191, Table 1, Item 10)

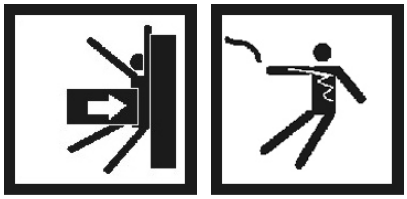
Materials/Parts
- Heat Shrink Tubing, 3/16 in. Dia (WP 0190, Table 1, Item 8)
- Heat Shrink Tubing, 1/8 in. Dia (WP 0190, Table 1, Item 7)
- Rag, Wiping (WP 0190, Table 1, Item 11)
- Terminal, Butt Splice, Non-Insulated, 22-18 AWG (WP 0190, Table 1, Item 15)
- Terminal, Quick Disconnect, Female, Non-Insulated 16-14 AWG, 110x.020 TAB (WP 0190, Table 1, Item 16)
- Terminal, Quick Disconnect, Female, Non-Insulated 22-18 AWG, 25x.032 TAB (WP 0190, Table 1, Item 17)
- Terminal, Quick Disconnect, Female, Non-Insulated 22-18 AWG, 110x.020 TAB (WP 0190, Table 1, Item 18)

Materials/Parts (cont.)
- Terminal, Ring Tongue, Non-Insulated, Brazed Seam, 16-14 AWG, STR CU Stud Size 6 (WP 0190, Table 1, Item 19)
- Terminal, Ring Tongue, Non-Insulated, Brazed Seam, 22-18 AWG, STR CU Stud Size 6 (WP 0190, Table 1, Item 20)
- Terminal, Tab Adapter, 2 Male/1 Female, Plated, .25x.032 TAB (WP 0190, Table 1, Item 21)
- Wire Tie, Black (WP 0190, Table 1, Item 24)

References
- Electrical Wiring Diagram (FO-1)
- Electrical Wiring List (FO-2)
- Electrical Wiring Schematic (FO-3)
- WP 0182

Equipment Condition
- Trailer Wheels Chocked (TM 9-2330-394-13&P)

WARNING



- Trailer must be secure. Always chock wheels before working on the Camel II.
- Electrical shock hazard, ensure external power source is disconnected from electrical control box and inter-vehicular harness is disconnected from prime mover, before working on electrical components.
- Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

This work package covers:

Wire Inspection and Replacement, Splicing Wires, Heat-Shrink Tubing (Electrical Insulating Sleeving), Terminal Repair, Connector Repair, Electrical Ground Points, and Multi-Meter Usage.

WIRE INSPECTION AND REPLACEMENT

NOTE

Refer to electrical wiring diagram (FO-1),electrical wiring list (FO-2), and electrical wiring schematic (FO-3) for wiring locations, components, and description.

Inspecting Wires.

1. Inspect wires for burned, damaged, missing, or cracked insulation.
2. Inspect wiring connections to ensure they are seated properly, secure and wire ends are not frayed.
3. Inspect terminal ends to ensure that they are seated properly and secure.

Replacing wires.

NOTE

- Ensure all wires are properly marked before disconnecting.
- Note the terminal locations for each end of wire being removed before disconnecting.

1. Remove wire ties as needed.
2. Disconnect each end of wire being replaced from electrical control box components.
3. Cut new wire from bulk roll of wire refer to Bulk Items (WP 0182). Ensure color and gauge are same type as wire being removed.
4. Replace end terminals as needed (Refer to End Terminal Repair) in this work package.
5. Route new wire into electrical control box panel.
6. Connect each end of new wire to the appropriate component terminals.

WIRE INSPECTION AND REPLACEMENT - Continued

7. Replace wire ties as needed.

END OF TASK

SPLICING WIRES

NOTE

High-quality splice connectors are essential to ensure optimum electrical integrity. Use the type and size of connector best suited to the application.

1. Inspect each end of wire (Figure 1, Item 1). Trim insulation and metal strands (Figure 1, Item 2) off wire, as necessary, to ensure integrity of wire.
2. Using wire stripping tool, strip each end of wire (Figure 1, Item 1) to expose length of metal strands (Figure 1, Item 2) suitable for size of splice connector (Figure 1, Item 3).
3. Insert metal strands (Figure 1, Item 2) of each wire (Figure 1, Item 1) fully into splice connector (Figure 1, Item 3).
4. Securely crimp splice connector (Figure 1, Item 3) to metal strands (Figure 1, Item 2) and to insulation of wire (Figure 1, Item 1).

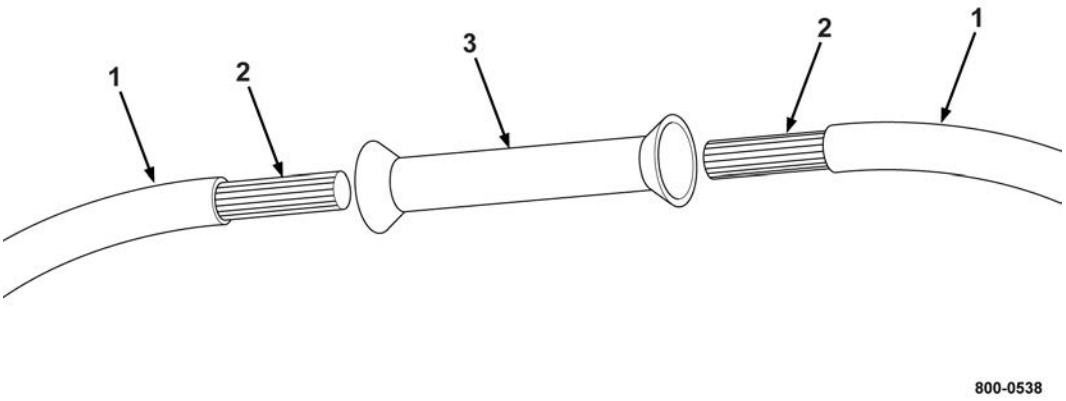


Figure 1. Splicing Wires.

END OF TASK

HEAT-SHRINK TUBING (ELECTRICAL INSULATING SLEEVING)

1. Use heat-shrinkable tubing to insulate soldered and crimped electrical connections.
2. Cut length of new tubing twice as long as connection to be covered.
3. Slide tubing onto wire and out of the way before making electrical connection.
4. After making electrical connection, slide tubing into place over electrical connection.

WARNING

DO NOT touch heat-shrink tubing for at least 30 sec after heating. Heat-shrink tubing is hot and will cause burns. Failure to comply may result in injury to personnel.

5. Using a heat source, apply heat to tubing for approximately 30 sec, until tubing snugly conforms to shape of electrical connection.

END OF TASK

END TERMINAL REPAIR OR REPLACEMENT

NOTE

This work package applies to both ring and push-on type terminals. Ring terminal is pictured in this instruction.

1. Use heat-shrink tubing when repairing terminals.
2. Remove end terminal (Figure 2, Item 6) from wire (Figure 2, Item 2) by cutting through wire just behind tubing (Figure 2, Item 1). Discard end terminal.
3. Cut tubing (Figure 2, Item 1) to length sufficient to cover tabs (Figure 2, Items 4 and 5) of end terminal (Figure 2, Item 6) and 1/4 in. (6 mm) of wire (Figure 2, Item 2).
4. Slide tubing (Figure 2, Item 1) back on wire (Figure 2, Item 2).
5. Using wire stripping tool, strip insulation from wire (Figure 2, Item 2) to expose proper length of metal strands (Figure 2, Item 3).
6. Using crimping tool, securely crimp tabs (Figure 2, Item 5) of new end terminal (Figure 2, Item 6) over metal strands (Figure 2, Item 3).
7. Using crimping tool, crimp tabs (Figure 2, Item 4) of end terminal (Figure 2, Item 6) over insulation of wire (Figure 2, Item 2).
8. Slide tubing (Figure 2, Item 1) over tabs (Figure 2, Items 4 and 5) of end terminal (Figure 2, Item 6).
9. Using a heat source, apply heat to tubing (Figure 2, Item 1) until tubing snugly conforms to end terminal (Figure 2, Item 6) and insulation of wire (Figure 2, Item 2).

END TERMINAL REPAIR OR REPLACEMENT - Continued

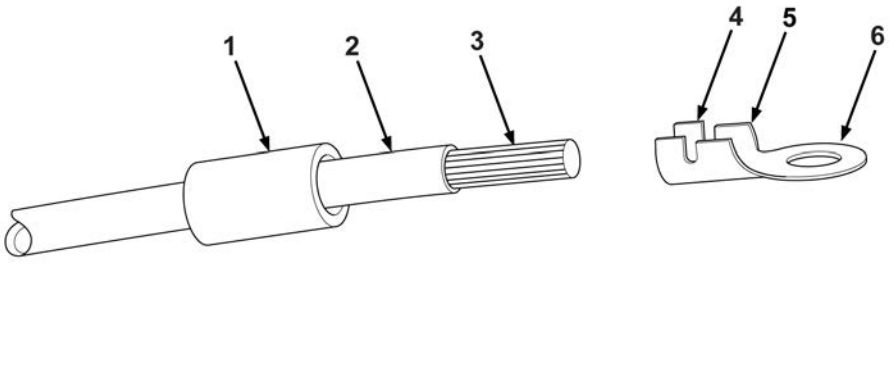


Figure 2. Repairing End Terminals.

END OF TASK

CONNECTOR PLUG REPAIR

1. Slide shell (Figure 3, Item 1) back on wire (Figure 3, Item 2) to expose sleeve (Figure 3, Item 5).
2. Remove sleeve (Figure 3, Item 5) from terminal (Figure 3, Item 4) by pulling sleeve forward.
3. If defective, remove terminal (Figure 3, Item 4) from wire (Figure 3, Item 2) by cutting through wire just behind terminal.

NOTE

Perform steps 4 through 6 only if terminal was removed.

4. Using wire stripping tool, strip insulation from wire (Figure 3, Item 2) to expose length of metal strands (Figure 3, Item 3) equal to depth of terminal (Figure 3, Item 4).
5. Using crimping tool, securely crimp terminal (Figure 3, Item 4) to metal strands (Figure 3, Item 3) of wire (Figure 3, Item 2).
6. Install sleeve (Figure 3, Item 5) on terminal (Figure 3, Item 4) by pushing sleeve over front of terminal until fully seated.
7. Slide shell (Figure 3, Item 1) up wire (Figure 3, Item 2) and over sleeve (Figure 3, Item 5).

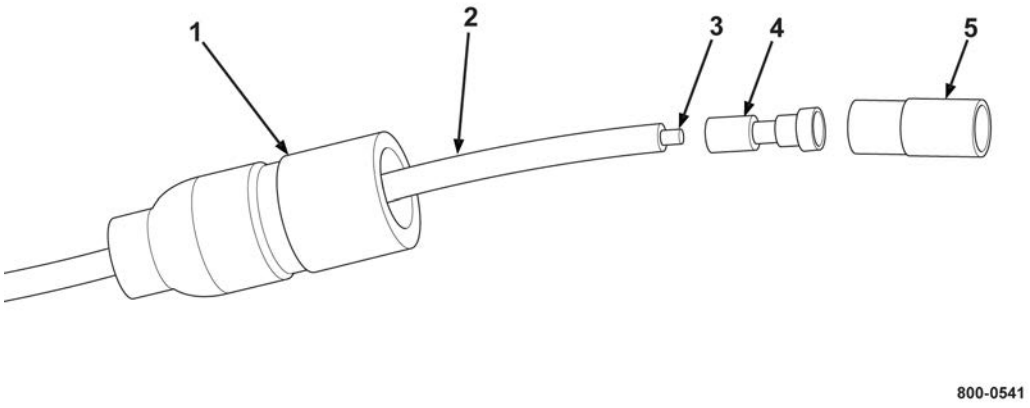


Figure 3. Repairing Connector Plugs.

END OF TASK

ELECTRICAL GROUND POINTS

NOTE

To function properly, the electrical system must have good electrical ground points. Ground points on electrical components and machine frame must be maintained in a clean and secure condition to minimize electrical problems.

1. Remove nut, locknut, lock washer, screw, etc., connecting ground wire or ground cable to ground point on electrical component or threaded stud on machine frame.
2. If necessary, clean dirt from ring terminal, surface of electrical component, ground point, and all mounting hardware with detergent, water, and a scrub brush.
3. Remove any corrosion or rust with a wire brush and abrasive cloth.

ELECTRICAL GROUND POINTS - Continued

4. Replace defective mounting hardware. Replace any defective ring terminals in accordance with (IAW) ring terminal repair in this work package.
5. Install ground wire or ground cable on ground point with mounting hardware and tighten securely.

END OF TASK

MULTI-METER USAGE

1. **General.** A multi-meter is used to troubleshoot the electrical system of the machine. The multi-meter ohms scale is used to test for continuity, shorts, and resistance. The multi-meter volt scale is used to test voltage levels at any point in the electrical system.
2. **Continuity Tests.** Continuity tests are performed to check for breaks in a circuit (such as a fuse, switch, light bulb connector, or electrical wiring).

NOTE

If readout will not zero properly, replace batteries and repeat zeroing procedure. If readout will not zero after batteries have been replaced, turn in for repair.

a. Zero multi-meter.
   (1) Select OHMS.
   (2) Select LOWEST VOLTAGE/OHMS scale.
   (3) Touch black and red probes together and check for a zero indication on digital readout.

b. **Testing for Continuity.**
   (1) Zero multi-meter.
   (2) Connect black and red probes to both terminals of circuit being tested.
   (3) Observe readout and interpret results as follows:
      (a) If readout indicates 0 (zero), circuit is open.
      (b) If readout indicates resistance, circuit has continuity.

c. **Testing for Shorts.** A short (or short circuit) occurs when two circuits that should not be connected have metal-to-metal contact with each other. A short also occurs when a circuit that should not touch ground has metal-to-metal contact with ground.
   (1) Zero multi-meter.
   (2) Connect black probe to one pin and red probe to either ground or another pin.
   (3) Observe readout and interpret results as follows:
      (a) If readout indicates 0 (zero), circuits are not shorted.
      (b) If readout indicates resistance, circuits are shorted or circuit is grounded, if testing to ground.
      (c) If readout jumps or flickers, circuits are shorted or grounded intermittently.

d. **Testing for Resistance.** Allowable resistance readings depend on circuit being tested. Refer to the troubleshooting section in this manual.
   (1) Zero multi-meter.
   (2) Select OHMS.

MULTI-METER USAGE - Continued

(3) Select LOWEST VOLTAGE/OHMS range. If test specifies ohms range, select required range.

(4) Connect black and red probes across circuit to be tested.

(5) Observe readout as circuit resistance.

3. **Measuring DC Voltage.**

a. Select VOLTS DC.

b. Select LOWEST VOLTAGE/OHMS range for voltage range that is higher than volts to be measured.

c. Connect red probe to positive (+) pin and black probe to negative (-) pin.

d. Observe readout as DC voltage in circuit being tested.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TORQUE LIMITS

SCOPE

This work package lists standard torque values and provides general information for applying torque. Special torque values and tightening sequences are indicated in the maintenance procedures for applicable components.

TORQUE LIMITS

GENERAL

1. Always use torque values listed in Tables 1 and 2 when a maintenance procedure does not give a specific torque value.
   a. Table 1 provides torque limits for SAE standard fasteners.
   b. Table 2 provides torque limits for metric fasteners.
2. Unless otherwise indicated, standard torque tolerance shall be ± 10%.
3. Torque values listed are based on clean, dry threads. Reduce torque by 10% when engine oil is used as a lubricant. Reduce torque by 20% if new plated cap screws are used.
4. If the maintenance procedures do not specify a tightening order, use the following guides:
   a. Unless otherwise specified, lubricate threads of fasteners with clean oil (OE/HDO-10).
   b. When tightening fasteners above 30 lb-ft (41 N•m), use the torque pattern but tighten to only 70% of final value (multiply final value by 0.7). Repeat pattern until final value is reached.
   c. Tighten circular patterns using circular torque pattern and tighten straight patterns using straight torque pattern.

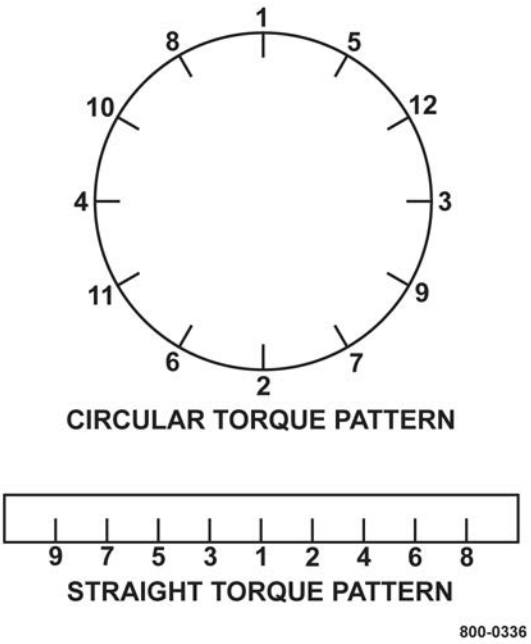


Figure 1. Torque Patterns.

TORQUE LIMITS - Continued

CAUTION

If replacement cap screws are of higher grade than those originally supplied, use torque specifications for the original. This precaution will prevent equipment damage due to over torquing.

HOW ADAPTERS AFFECT TORQUE LIMITS

When using adapters or extensions that increase the length of the torque wrench, the applied torque will be greater than the torque wrench setting.

NOTE

Adapters that add 1 in. (2.5 cm) or less to the torque wrench length do not require recalculation of torque. Only if the required torque has an exceedingly tight tolerance should the new torque be recalculated.

Adapters that do not increase the overall length of the adapter will not affect the torque reading, as shown in the example below:

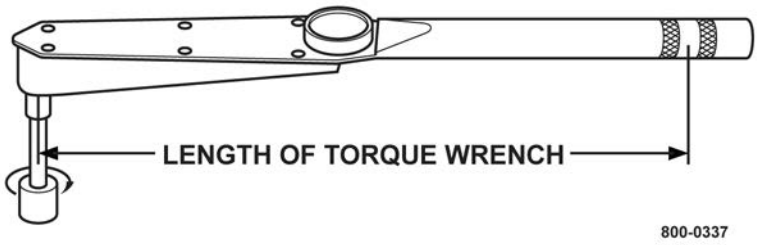


Figure 2. Adapter Does Not Affect Torque Reading.

When measuring the adapter, measure only the distance the torque wrench is extended by the adapter, as shown in the example below:

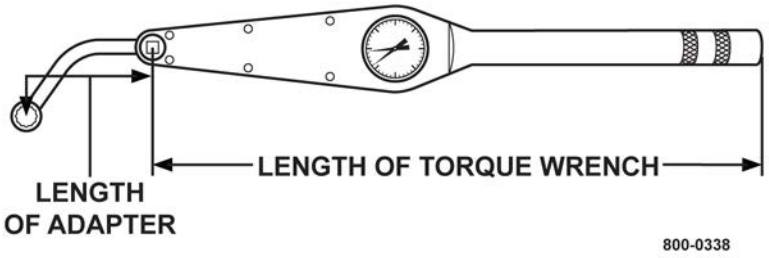


Figure 3. Measuring Distance Extended by Adapter.

TORQUE LIMITS - Continued

Use the following steps to calculate the correct torque setting when using adapters or extensions.

1. Measure extension length from center of torque wrench connecting point with center point of socket.

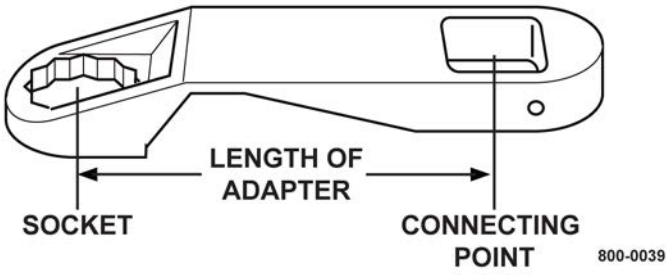


Figure 4. Measuring Extension.

2. Measure torque wrench from connecting point center to handle center.

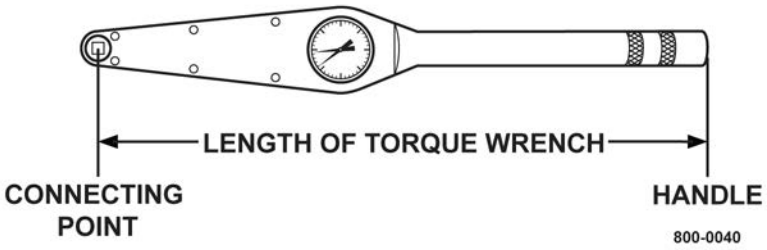


Figure 5. Measuring Torque Wrench.

3. Calculate torque value.

$$\text{TORQUE WRENCH SETTING} = \frac{\text{TORQUE WRENCH LENGTH} \times \text{TORQUE REQUIRED}}{\text{TORQUE WRENCH LENGTH} + \text{EXTENSION LENGTH}}$$

800-0342

Figure 6. Calculating Torque.

For example:

A 6 in. extension is used on an 18 in. torque wrench. The required torque is 300 lb-ft (407 N•m). Using the formula, the torque wrench setting can be determined:

TORQUE LIMITS - Continued

$$\frac{18 \times 300}{18 + 6} = \frac{5400}{24} = 225 \text{ lb-ft } (305 \text{Nm})$$

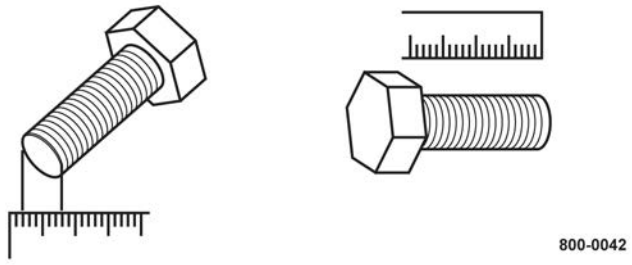
800-0041

Figure 7. Torque Calculation Example.

Therefore, a torque wrench setting of 225 lb-ft (305 N•m) will result in the required torque of 300 lb-ft (407 N•m).

HOW TO USE TORQUE TABLES

1. Measure the diameter of the bolt you are installing.



800-0042

Figure 8. Measuring a Bolt.

TORQUE LIMITS - Continued

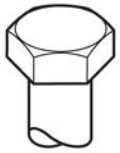
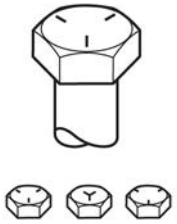
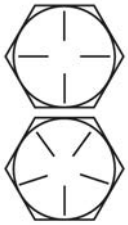
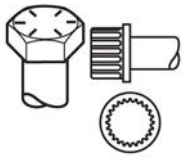
NOTE

Threads-per-inch measurement applies to SAE standard fasteners only (Table 1).

2. Count the number of threads per inch or use a pitch gauge.
3. Look down the left-hand column and find the diameter and number of threads per inch of the bolt you are installing.
4. Find the torque value for the grade of bolt you are installing.

TORQUE TABLES

Table 1. Torque Limits - SAE Standard Fasteners.

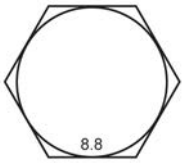
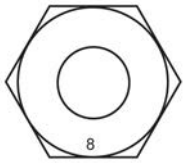
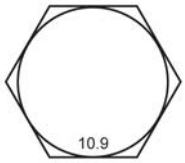
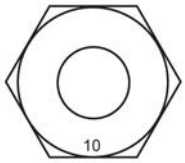
QUALITY OF MATERIAL		INDETERMINATE		MINIMUM COMMERCIAL		MEDIUM COMMERCIAL		BEST COMMERCIAL	
SAE Grade Number		1 or 2		5		6 or 7		8	
									
CAPSCREW BODY SIZE IN. - THREAD		**TORQUE lb-ft (N•m)**		**TORQUE lb-ft (N•m)**		**TORQUE lb-ft (N•m)**		**TORQUE lb-ft (N•m)**	
1/4	20 28	5 6	(7) (8)	8 10	(11) (14)	10	(14)	12 14	(16) (19)
5/16	18 24	11 13	(15) (18)	17 19	(23) (26)	19	(26)	24 27	(33) (37)
3/8	16 24	18 20	(24) (27)	31 35	(42) (47)	34	(46	44 49	(60) (66)
7/16	14 20	28 30	(38) (41)	49 55	(66) (75)	55	(75)	70 78	(95) (106)
1/2	13 20	39 41	(53) (56)	75 85	(102) (115)	85	(115)	105 120	(142) (163)
9/16	12 18	51 55	(69) (75)	110 120	(149) (163)	120	(163)	155 170	(210) 231
5/8	11	83	(113)	150	(203)	167	(226)	210	(285)

TORQUE LIMITS - Continued

Table 1. Torque Limits - SAE Standard Fasteners - Continued.

QUALITY OF MATERIAL		INDETERMINATE		MINIMUM COMMERCIAL		MEDIUM COMMERCIAL		BEST COMMERCIAL	
	18	95	(129)	170	(231)			240	(325)
3/4	10	105	(142)	270	(366)	280	(380)	375	(508)
	16	115	(156)	295	(400)			420	(569)
7/8	9	160	(217)	395	(536)	440	(597)	605	(820)
	14	175	(237)	435	(590)			675	(915)
1	8	235	(319)	590	(800)	660	(895)	910	(1,234)
	14	250	(339)	660	(895)			990	(1,342)

Table 2. Torque Limits - Metric Fasteners.

THREAD DIAMETER - PITCH	 Class 8.8 Bolt	 Class 8 Nut	 Class 10.9 Bolt	 Class 10 Nut
	Torque: lb-ft (N•m)		Torque: lb-ft (N•m)	
M6	5 (7)		7 (9)	
M8	12 (16)		17 (23)	
M8 x 1	13 (18)		18 (24)	
M10	24 (33)		34 (46)	
M10 x 1.25	27 (37)		38 (52)	
M12	42 (57)		60 (81)	
M12 x 1.5	43 (58)		62 (84)	
M14	66 (89)		95 (129)	
M14 x 1.5	72 (98)		103 (140)	
M16	103 (140)		148 (201)	
M16 x 1.5	110 (149)		157 (213)	
M18	147 (199)		203 (275)	
M18 x 1.5	165 (224)		229 (310)	

TORQUE LIMITS - Continued

Table 2. Torque Limits - Metric Fasteners - Continued.

M20 M20 x 1.5	208 (282) 213 (289)	288 (390) 320 (434)
M22 M22 x 1.5	283 (384) 315 (427)	392 (531) 431 (584)
M24 M24 x 2	360 (488) 392 (531)	498 (675) 542 (735)
M27 M27 x 2	527 (715) 569 (771)	729 (988) 788 (1,068)
M30 M30 x 2	715 (969) 792 (1,074)	990 (1,342) 1,096 (1,486)

END OF TASK

END OF WORK PACKAGE

CHAPTER 7

PARTS INFORMATION

FIELD MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) - INTRODUCTION

INTRODUCTION

SCOPE

This RPSTL lists the authorized spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of field level maintenance of the Camel II. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages.

1. Repair Parts List Work Packages. Work packages containing lists of spare and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in the FIG. BULK at the end of the work packages. Repair parts kits are listed at the end of the individual work packages. Repair parts for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. Special Tools List Work Packages. Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column). Tools that are components of common tool sets and/or Class VII are not listed.
3. Cross-Reference Indexes Work Packages. There are two cross-reference indexes work packages in this RPSTL. The National Stock Number Index work package refers you to the Figure and item number. The Part Number Index work package refers you to the figure and item number.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES

ITEM NO. (Column 1). Indicates the number used to identify items called out in the illustration.

SMR CODE (Column 2). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into 4 subentries, one for each service.

Table 1. SMR Code Explanation.

Source Code		Maintenance Code		Recoverability Code
XX		XX		X
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.		5th position: Who determines disposition action on unserviceable items.

*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Source Code	Application/Explanation
PA PB	
PC	**NOTE** Items coded PC are subject to deterioration.
PD PE PF PG PH PR PZ	Stock items; use the applicable NSN to requisition/ request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code.
KD KF KB	Items with these codes are not to be requested/ requisitioned individually. They are part of a kit that is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MF-Made at field MH-Made at below depot sustainment level ML-Made at SRA MD-Made at depot MG-Navy only	Items with these codes are not to be requisitioned/ requested individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group work package of the RPSTL. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.

Source Code	Application/Explanation
AF-Assembled by field AH-Assembled by below depot sustainment level AL-Assembled by SRA AD-Assembled by depot AG - Navy only	Items with these codes are not to be requested/ requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's part number.
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code	Application/Explanation
F -	Field maintenance can remove, replace, and use the item.
H -	Below Depot Sustainment maintenance can remove, replace, and use the item.
L -	Specialized repair activity can remove, replace, and use the item
G -	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only)
K -	Contractor facility can remove, replace, and use the item.
Z -	Item is not authorized to be removed, replaced, or used at any maintenance level.
D -	Depot can remove, replace, and use the item.

*NOTE - Army may use C in the third position. However, for joint service publications, Army will use O.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is sto be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Maintenance Code	Application/Explanation
F -	Field is the lowest level that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L -	Specialized repair activity is the lowest level that can do complete repair of the item.
D -	Depot is the lowest level that can do complete repair of the item.
G -	Both afloat and ashore intermediate levels are capable of complete repair of item. (Navy only)

Maintenance Code	Application/Explanation
K -	Complete repair is done at contractor facility.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of “B” coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot.
L -	Reparable item. Condemnation and disposal not authorized below Specialized Repair Activity (SRA).
A -	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G -	Field level reparable item. Condemn and dispose at either afloat or ashore intermediate levels. (Navy only)
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Column (3)). The NSN(s) for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)). This column includes the following information:

1. The federal item name, and when required, a minimum description to identify the item.
2. Part numbers of any bulk materials required if the item is to be locally manufactured or fabricated.
3. Hardness Critical Item (HCI). A support Item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. The statement END OF FIGURE appears below the last item description in column (6) for a given figure in the both the repair parts list and special tools list work packages.

QTY (Column (7)). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. National Stock Number (NSN) Index Work Package. NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

ITEM Column. This column identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

2. Part Number (P/N) Index Work Package. Part numbers in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

PART NUMBER Column. This column indicates the part number assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.

ITEM Column. The item number is the number assigned to the item as it appears in the Figure referenced in the adjacent Figure number column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC:" in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the RPSTL are:

Code	Used On
UWP	Model Camel II 800

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of the this RPSTL. Part numbers for bulk material are also referenced in teh Description column of the line item entry for the item to be manufactured/fabricated.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN/Part Number (P/N) Index work packages and the bulk material list in the bulk items work package.

HOW TO LOCATE REPAIR PARTS

1. When NSNs or Part Numbers Are Not Known.

First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

Second. Find the figure covering the functional group or the sub functional group to which the item belongs.

Third. Identify the item on the figure and note the number(s).

Fourth. Look in the repair parts list work packages for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

2. When NSN Is Known.

First. If you have the NSN, look in the STOCK NUMBER column of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. When Part Number is known.

First. If you have the part number and not the NSN, look in the PART NUMBER Column of the part number index work package. Identify the figure and item number.

Second. Look up the item on the figure in the applicable repair parts list work package.

ABBREVIATIONS

Abbreviation	Explanation

There are no uncommon abbreviations in this RPSTL.

END OF WORK PACKAGE

FIELD MAINTENANCE
TRAILER TANK, CAMEL II

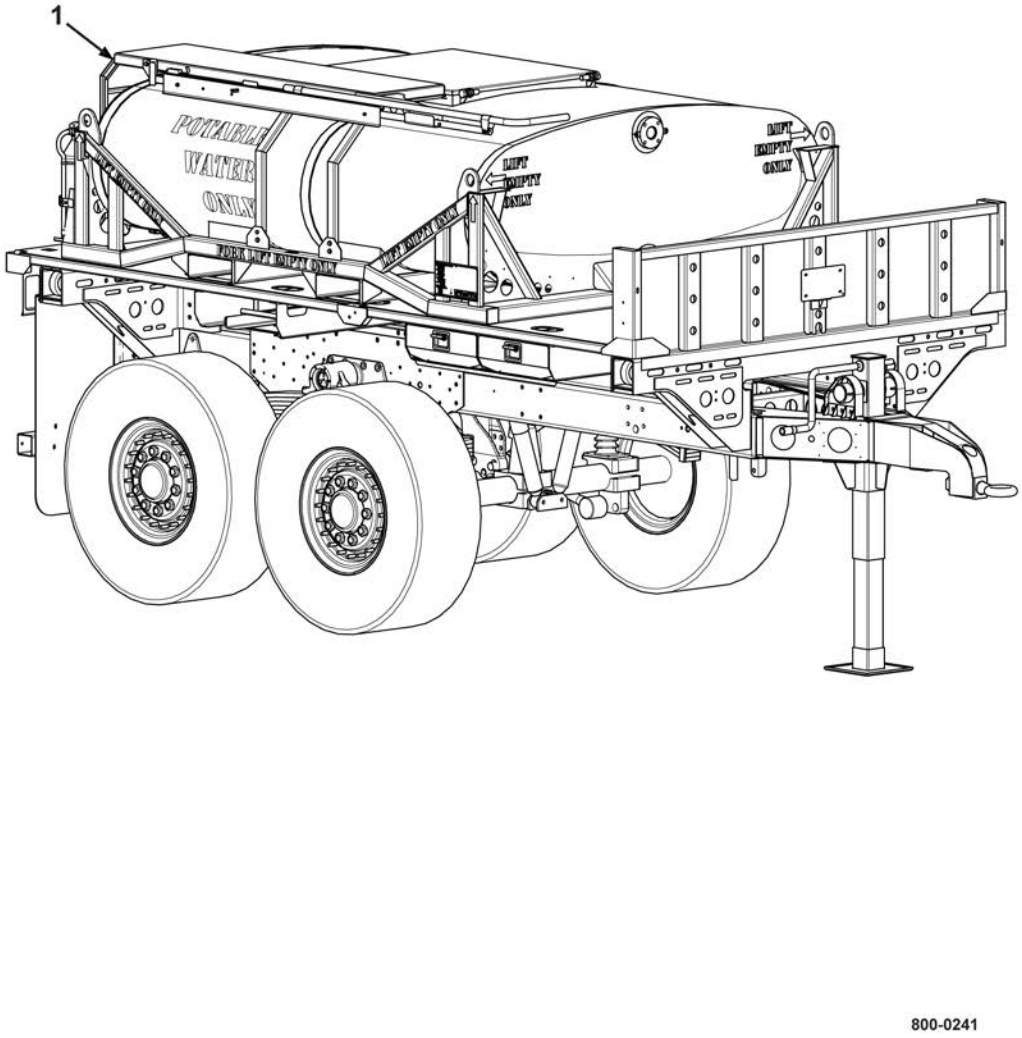


Figure 1. Trailer Tank, Camel II

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 TRAILER TANK, CAMEL II	
					FIG. 1. TRAILER TANK, CAMEL II	
1	PDFHH	2330-01-580-7654	19207	CZ4A10000	TRAILER TANK, CAMEL II UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
GENERATOR SET ADAPTOR

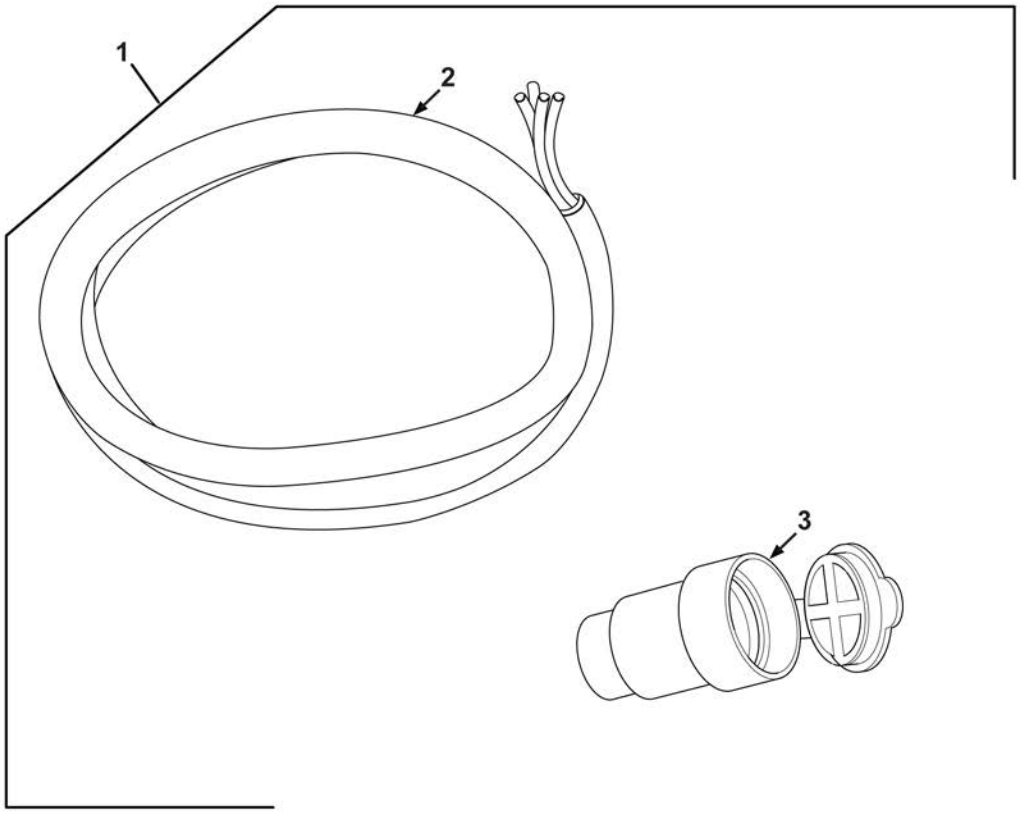


Figure 2. GENERATOR SET ADAPTOR

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0101 GENERATOR SET ADAPTOR	
					FIG. 2. GENERATOR SET ADAPTOR	
1	PAFFF	5995-01-610-5586	19207	12562526	CABLE ASSEMBLY SPECIAL PURPOSE, ELECTRICAL, GEN-SET ADAPTOR UOC: UWP	1
2	PAFZZ	6145-01-623-9196	19207	12562526-01	. CORD ELECTRICAL, 10/4 SO, 2 FT UOC: UWP	1
3	PAFZZ	5935-01-621-6539	1UX99	130147-0102	. CONNECTOR PLUG, ELECTRICAL, NEMA, L14-30, FEMALE UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
EXTENSION 25 FT POWER CORD

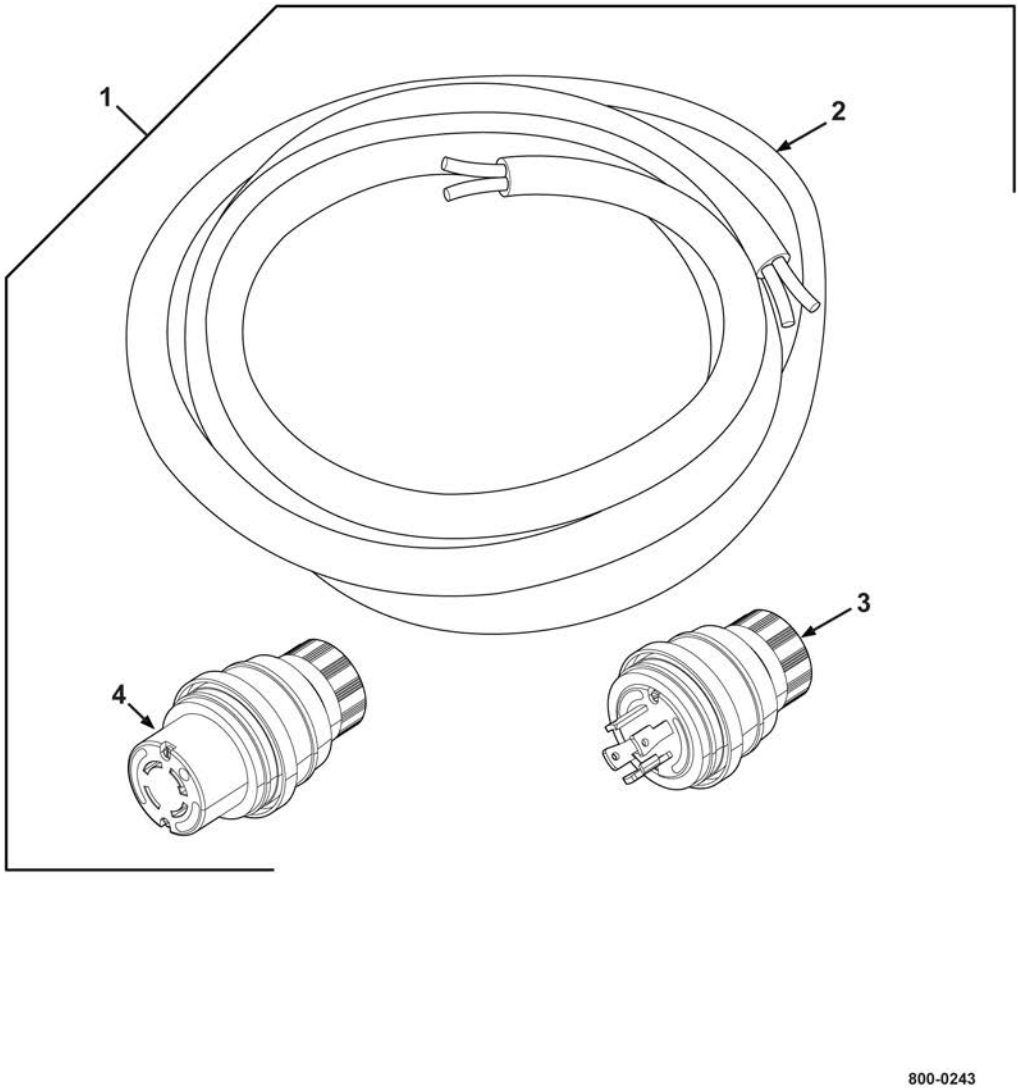


Figure 3. EXTENSION 25 FT POWER CORD

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0102 EXTENSION 25 FT POWER CORD	
					FIG. 3. EXTENSION 25 FT POWER CORD	
1	PAFFF	5995-01-619-8263	19207	12562527	WIRING HARNESS POWER CORD, EXTENSION, 25' UOC: UWP	1
2	PAFZZ	5995-01-625-5339	19207	12562527-01	. CORD ASSEMBLY ELECTRICAL, 10/4 SO, 25 FT UOC: UWP	1
3	PAFZZ	5935-01-621-3711	6Y725	130147-0077	. CONNECTOR PLUG, ELECTRICAL, L14-30, MOLEX, WATERTITE, NEMA, MALE UOC: UWP	1
4	PAFZZ	5935-01-621-6909	1UX99	130147-0104	. CONNECTOR PLUG, ELECTRICAL, L14-30, MOLEX, WATERTITE, NEMA, FEMALE UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
SINGLE POINT DISPENSING SYSTEM

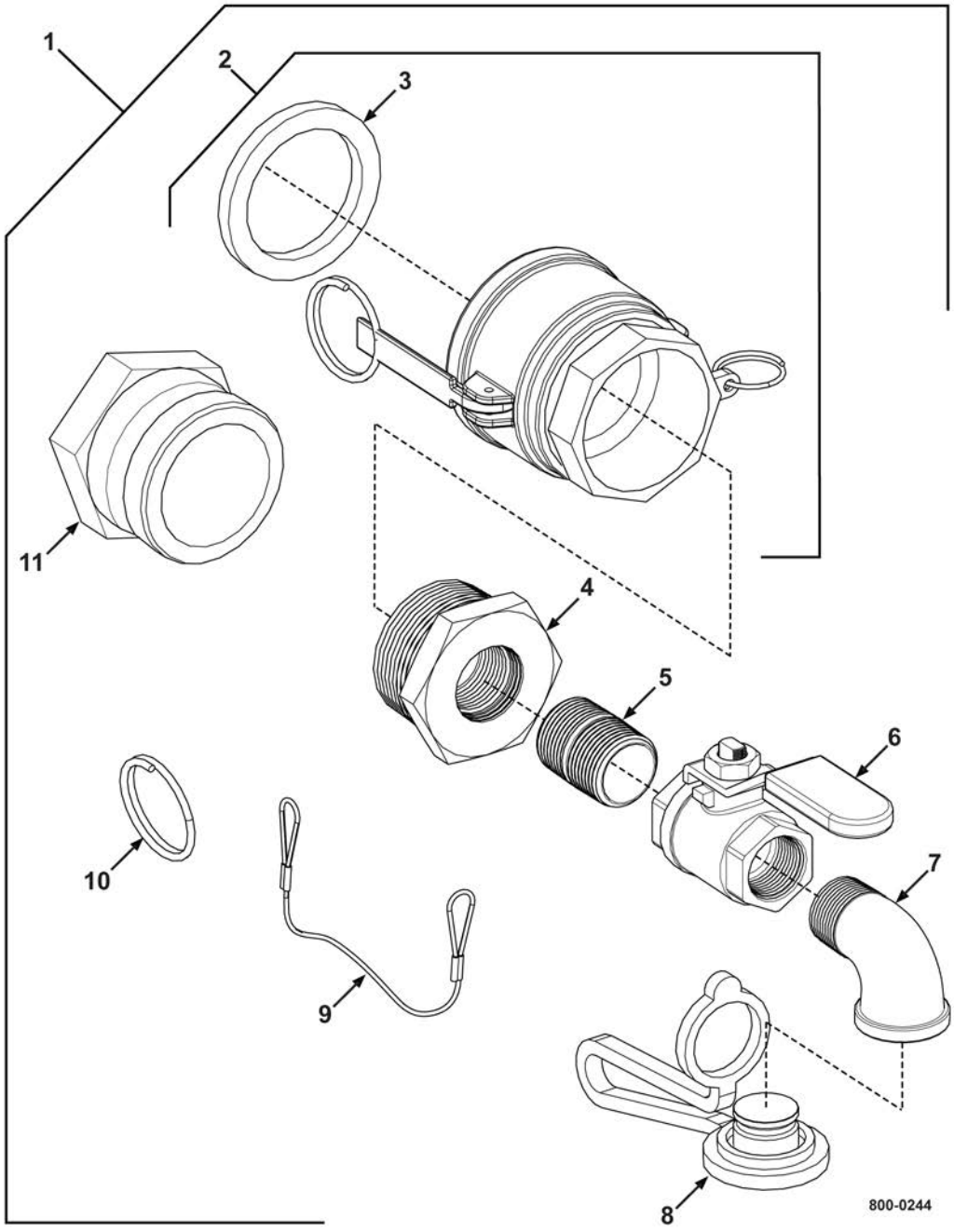


Figure 4. SINGLE POINT DISPENSING SYSTEM

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0103 SINGLE POINT DISPENSING SYSTEM	
					FIG. 4. SINGLE POINT DISPENSING SYSTEM	
1	PAFFF	4710-01-623-6974	19207	12562445	DISPENSING ASSEMBLY SINGLE POINT UOC: UWP	1
2	PAFZZ	4730-01-609-1349	58536	AA59326/10-6-SS	. CAP QUICK DISCONNECT, COUPLER, FEMALE CAP, 2 IN UOC: UWP	1
3	PCFZZ	5330-00-612-2414	58536	AA59326-G6	. . GASKET CIRCULAR UOC: UWP	1
4	PAFZZ	4730-01-607-6335	39428	4464K172	. BUSHING PIPE, REDUCING, 2 IN NPT X .75 IN NPT UOC: UWP	1
5	PAFZZ	4730-01-305-8657	39428	4830K191	. NIPPLE PIPE, 1.5 IN NPT X 3.0 IN UOC: UWP	1
6	PAFZZ	3040-01-622-6357	4AJD1	F11SRC-75	. LEVER MANUAL CONTROL, VALVE, BALL, .75 IN , DISPENSING UOC: UWP	1
7	PAFZZ	4730-01-620-0726	39428	4464K39	. ELBOW PIPE, 3/4 IN , 90 DEG, FEMALE X MALE UOC: UWP	1
8	PAFZZ	5340-01-458-7237	97111	5205-4M	. CAP PROTECTIVE, DUST AND MOISTURE SEAL UOC: UWP	1
9	PAFZZ	4010-01-608-4893	39428	30345T23	. WIRE ROPE ASSEMBLY SINGLE LEG, SINGLE POINT LANYARD UOC: UWP	1
10	PAFZZ	5325-01-468-9368	39428	90905A655	. RING RETAINING, SINGLE POINT UOC: UWP	2
11	PAFZZ	4730-01-563-6542	1N0X4	07023P20	. COUPLING HALF QUICK DISCONNECT, MALE, 2 IN UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
LANYARD AND SPLIT RING

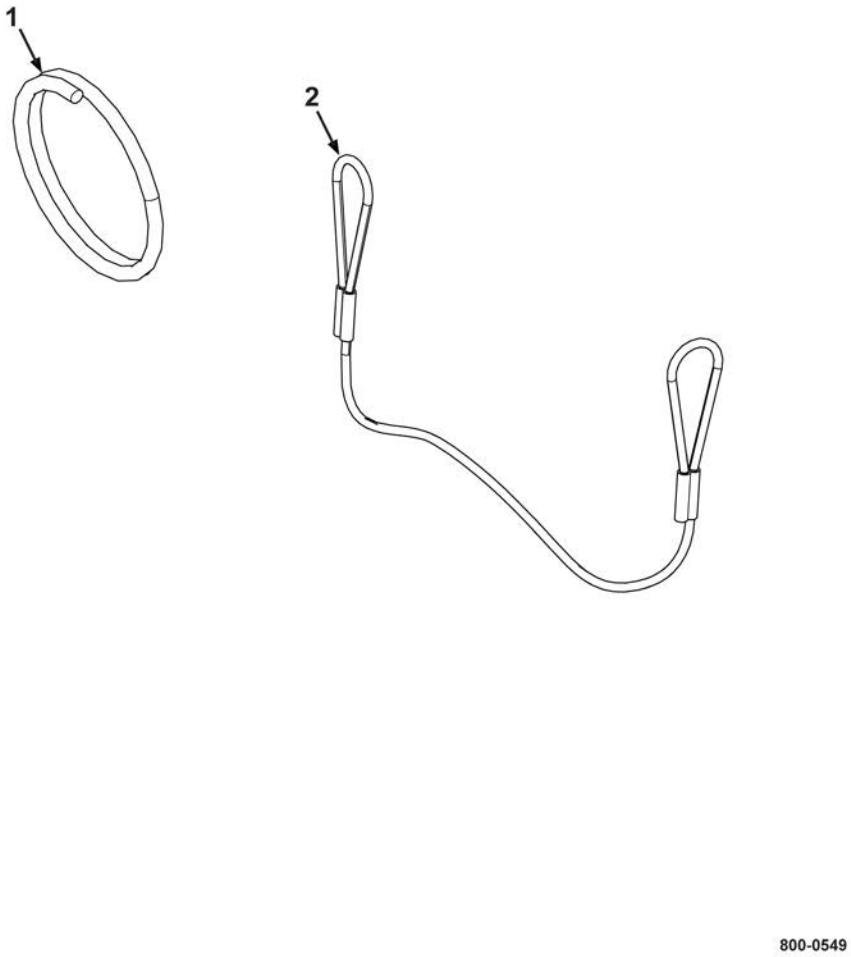


Figure 5. LANYARD AND SPLIT RING

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0104 LANYARD AND SPLIT RING	
					FIG. 5. LANYARD AND SPLIT RING	
1	PAFZZ	5325-01-468-9368	39428	90905A655	RING RETAINING, SINGLE POINT UOC: UWP	1
2	PAFZZ	4010-01-608-4893	39428	30345T23	WIRE ROPE ASSEMBLY SINGLE LEG, LANYARD UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
SIX POINT DISPENSING SYSTEM

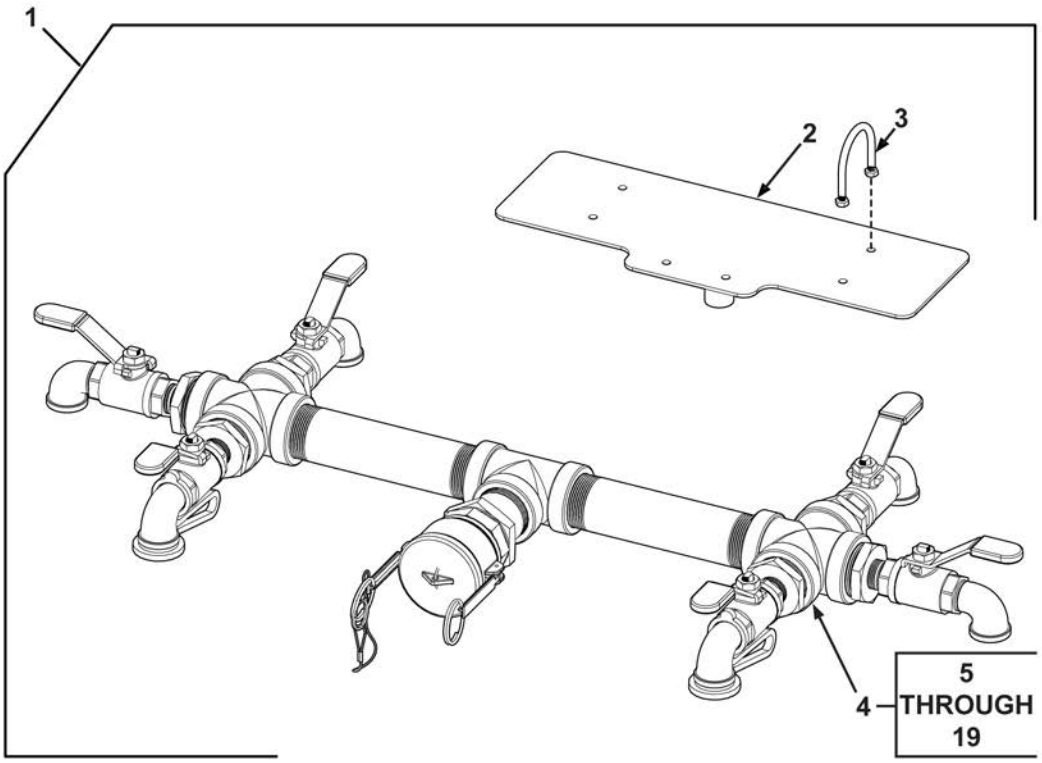


Figure 6. SIX POINT DISPENSING SYSTEM (Sheet 1 of 2)

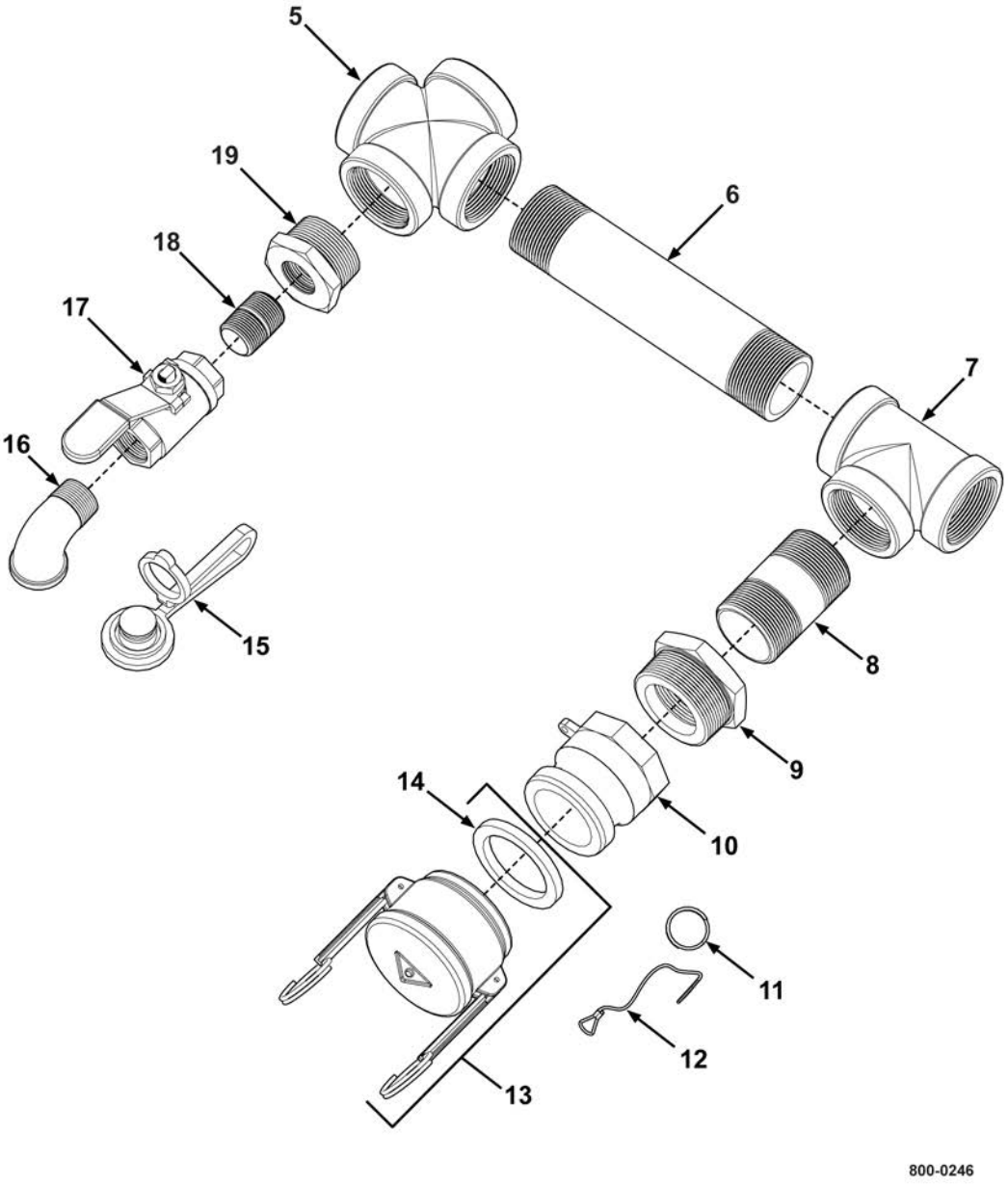


Figure 6. SIX POINT DISPENSING SYSTEM (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0105 SIX POINT DISPENSING SYSTEM	
					FIG. 6. SIX POINT DISPENSING SYSTEM	
1	PAFFF	5340-01-620-5391	19207	12562446	BRACKET MULTIPLE ANGLE, MOUNTING ASSEMBLY, DISPENSING SYSTEM, 6 POINT, 1.5 IN UOC: UWP	1
2	PAFFF	5340-01-620-4078	19207	12562447	. BRACKET MOUNTING, MOUNT ASSY, DISPENSING SYSTEM UOC: UWP	1
3	PAFZZ	5306-01-526-5035	19207	12562447-03	. . BOLT U, 25-20 X .75, 2 IN OD, NUTS INCLUDED WITH BOLT UOC: UWP	3
4	PAFFF	4710-01-623-6972	19207	12562446-01	. DISPENSING SYSTEM 6 POINT, 1.5 IN UOC: UWP	1
5	PAFZZ	4730-01-420-5921	39428	4464K318	. . CROSS PIPE, 1.5 IN FNPT UOC: UWP	2
6	PAFZZ	4730-01-282-1698	39428	4830K269	. . NIPPLE PIPE, 1.5 X 8.0 SCHEDULE 40 UOC: UWP	2
7	PAFZZ	4730-01-127-2585	73030	AD36475-2	. . TEE PIPE, 1.5 X 1.5 X 1.5 FNPT UOC: UWP	1
8	PAFZZ	4730-01-282-1693	39428	4830K265	. . NIPPLE PIPE, 1.5 NPT X 3.0 NPT UOC: UWP	1
9	PAFZZ	4730-01-607-6337	39428	4464K175	. . BUSHING PIPE, HEX REDUCER, 2.0 IN NPT X 1.5 IN FNPT UOC: UWP	1
10	PAFZZ	4730-01-563-6542	1N0X4	07023P20	. . COUPLING HALF QUICK DISCONNECT, MALE, 2 IN UOC: UWP	1
11	PAFZZ	5325-01-468-9368	39428	90905A655	. . RING RETAINING, 6 POINT UOC: UWP	2
12	PAFZZ	4010-01-608-4893	39428	30345T23	. . WIRE ROPE ASSEMBLY SINGLE LEG, 6 POINT DISPENSING LANYARD UOC: UWP	1
13	PAFZZ	4730-01-609-1349	58536	AA59326/10-6-SS	. . CAP QUICK DISCONNECT, COUPLER, FEMALE CAP, 2 IN UOC: UWP	1
14	PCFZZ	5330-00-612-2414	58536	AA59326-G6	. . . GASKET CIRCULAR UOC: UWP	1
15	PAFZZ	5340-01-458-7237	97111	5205-4M	. . CAP PROTECTIVE, DUST AND MOISTURE SEAL UOC: UWP	6
16	PAFZZ	4730-01-620-0726	39428	4464K39	. . ELBOW PIPE, 3/4 IN , 90 DEG, FEMALE X MALE UOC: UWP	6

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
17	PAFZZ	3040-01-622-6357	4AJD1	F11SRC-75	. . LEVER MANUAL CONTROL, VALVE, BALL, .75 IN , DISPENSING UOC: UWP	6
18	PAFZZ	4730-01-305-8657	39428	4830K191	. . NIPPLE PIPE, 1.5 IN NPT X 3.0 IN UOC: UWP	6
19	PAFZZ	4730-01-607-6336	39428	4464K156	. . BUSHING PIPE, HEX REDUCER, 1.5 X .75 NPT UOC: UWP	6

END OF FIGURE

FIELD MAINTENANCE
DISPENSING STAND ASSEMBLY

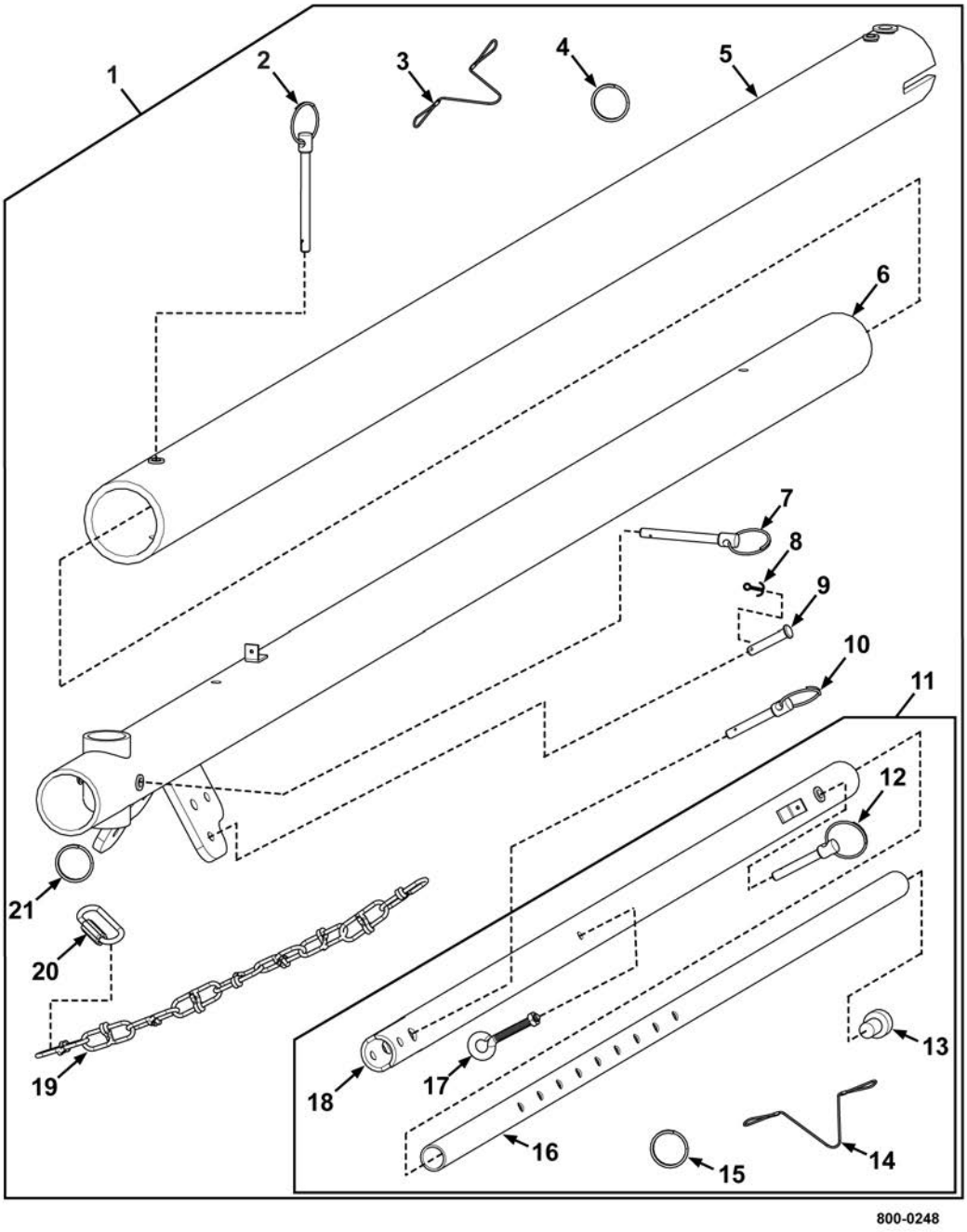


Figure 7. DISPENSING STAND ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0106 DISPENSING STAND ASSEMBLY	
					FIG. 7. DISPENSING STAND ASSEMBLY	
1	PAFFF	2590-01-620-9918	19207	12562536	LEG SEMITRAILER RETRACTABLE SUPPORT, STAND ASSY, DISPENSING UOC: UWP	1
2	PAFZZ	5315-01-620-3677	39428	95165A041	. PIN QUICK RELEASE, .25DIA X 2.50 LG, INNER TUBE UOC: UWP	1
3	PAFZZ	4010-01-587-5554	3A054	30345T31	. WIRE ROPE ASSEMBLY SINGLE LEG, DISPENSING SUPPORT UOC: UWP	4
4	PAFZZ	5325-01-468-9368	39428	909A655	. RING RETAINING UOC: UWP	2
5	PAFZZ	4710-01-620-9914	19207	12562535	. TUBE ASSEMBLY METAL, OUTER TUBE, DISPENSING SUPPORT UOC: UWP	1
6	PAFZZ	4710-01-620-4018	19207	12562533	. TUBE ASSEMBLY METAL, INNER TUBE, SUPPORT DISPENSING UOC: UWP	1
7	PAFZZ	5315-01-495-5228	39428	95165A038	. PIN QUICK RELEASE, MOUNT PLATE UOC: UWP	1
8	PAFZZ	5315-01-620-0634	6ROC8	03-062-0750	. PIN COTTER, .063 DIA X .75LG, SUPPORT LEG UOC: UWP	2
9	PAFZZ	5315-01-582-6263	07BY4	92390A162	. PIN STRAIGHT, HEADED, SUPPORT LEG UOC: UWP	2
10	PAFZZ	5315-01-533-4361	05259	706E002-44	. PIN QUICK RELEASE, SUPPORT LEG UOC: UWP	2
11	PAFZZ	4710-01-620-0878	4D3B0	12562534	. TUBE ASSEMBLY SET METALLIC, BI-POD SUPPORT LEG UOC: UWP	2
12	PAFZZ	5315-01-533-4361	05259	706E002-44	. . PIN QUICK RELEASE, BIPOD LEG EXTENSION UOC: UWP	1
13	PAFZZ	5340-01-620-3067	3M927	835-1365	. . BUMPER PAD, FOOT, PUSH-IN, M-S SBR RUBBER 40A, LOWER BIPOD LEG UOC: UWP	1
14	PAFZZ	4010-01-587-5554	3A054	30345T31	. . WIRE ROPE ASSEMBLY SINGLE LEG, BIPOD LEG EXTENSION UOC: UWP	1
15	PAFZZ	5325-01-468-9368	39428	90905A655	. . RING RETAINING UOC: UWP	1
16	PFFZZ	4730-01-619-9483	19207	12562534-02	. . LEG LOWER BIPOD, .75OD X 3.0' UOC: UWP	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
17	PAFZZ	5306-01-620-4254	39428	9489T55	. BOLT EYE, 10-24UNC X 1.25, 1.375 SHANK, WITH NUT UOC: UWP	2
18	PFFZZ	5410-01-620-5394	19207	12562534-01	. . LEG ASSEMBLY TUBULAR, SUPPORT LEG, UPPER BIPOD, . 75OD X 3.0' UOC: UWP	1
19	PAFZZ	4010-01-619-8825	1FF17	15512	. CHAIN STUD LINK, DOUBLE-LOOP, SIZE #1 UOC: UWP	1
20	PAFZZ	4010-01-225-2680	39428	8947T24	. LINK DETACHABLE UOC: UWP	2
21	PAFZZ	5325-01-468-9368	39428	90905A655	. RING RETAINING UOC: UWP	1

END OF FIGURE

FIELD MAINTENANCE
MODIFIED, M1095 TRAILER ASSEMBLY

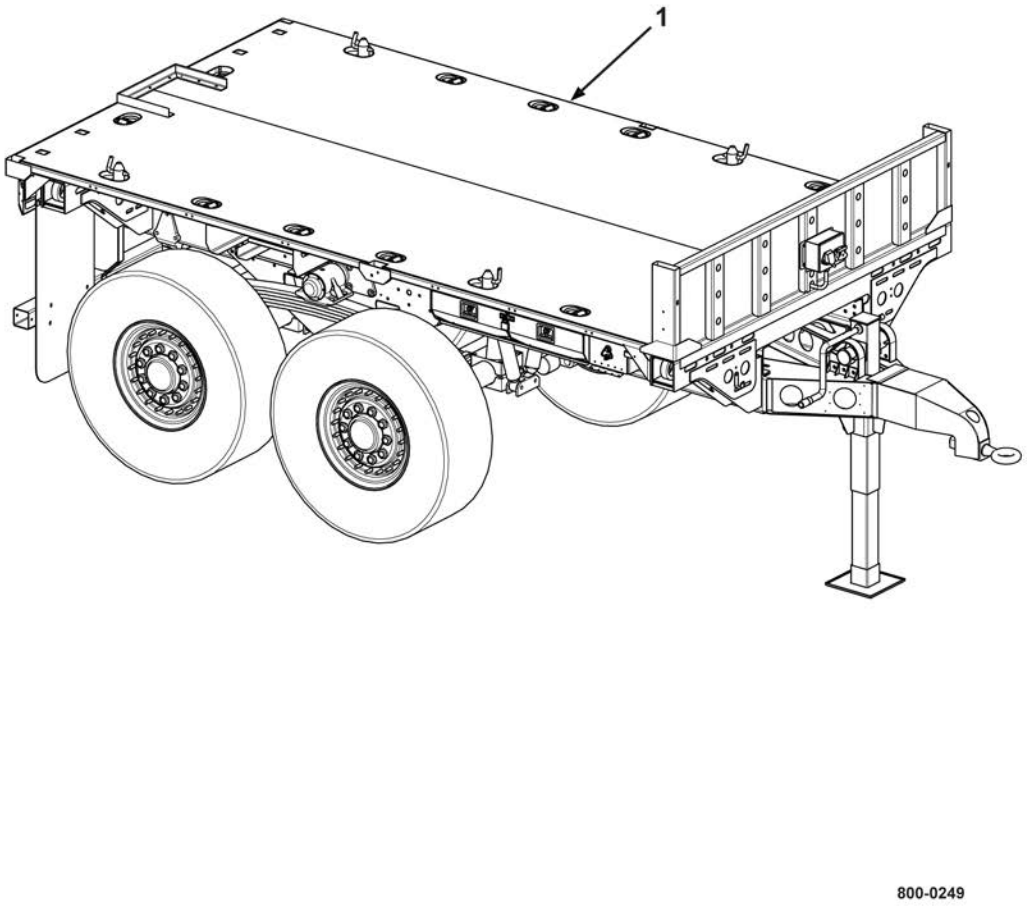


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 1 of 9)

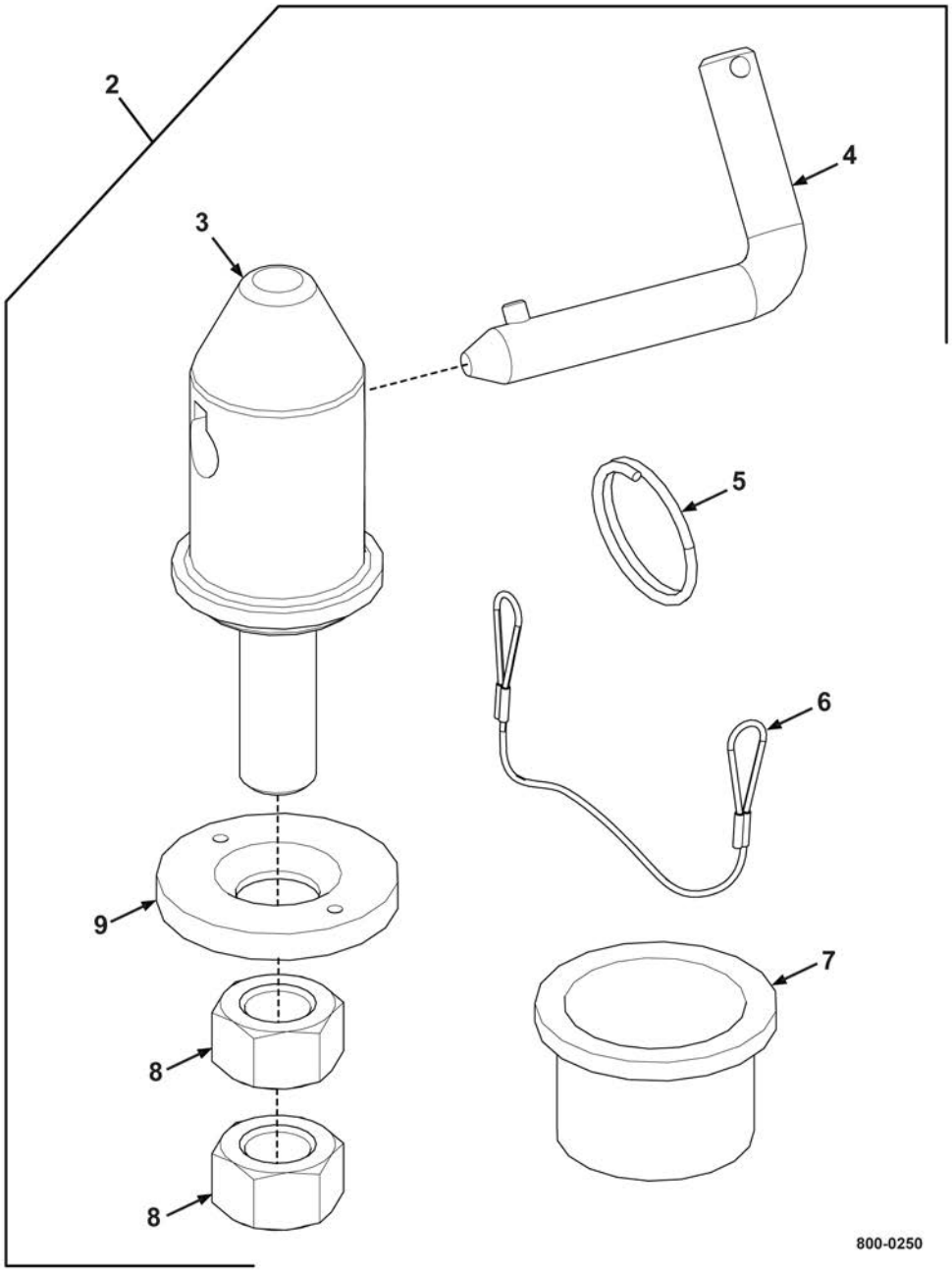


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 2 of 9)

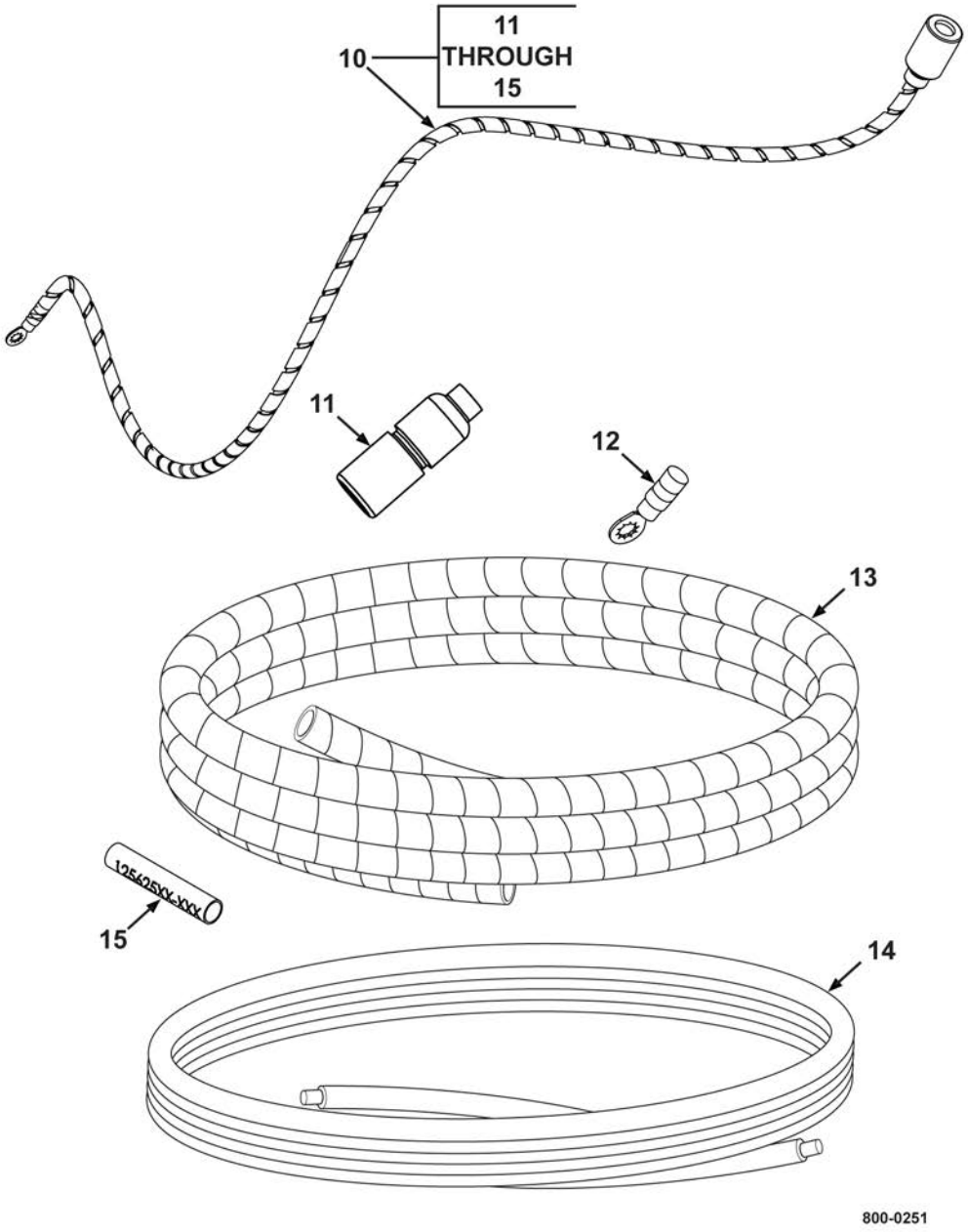


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 3 of 9)

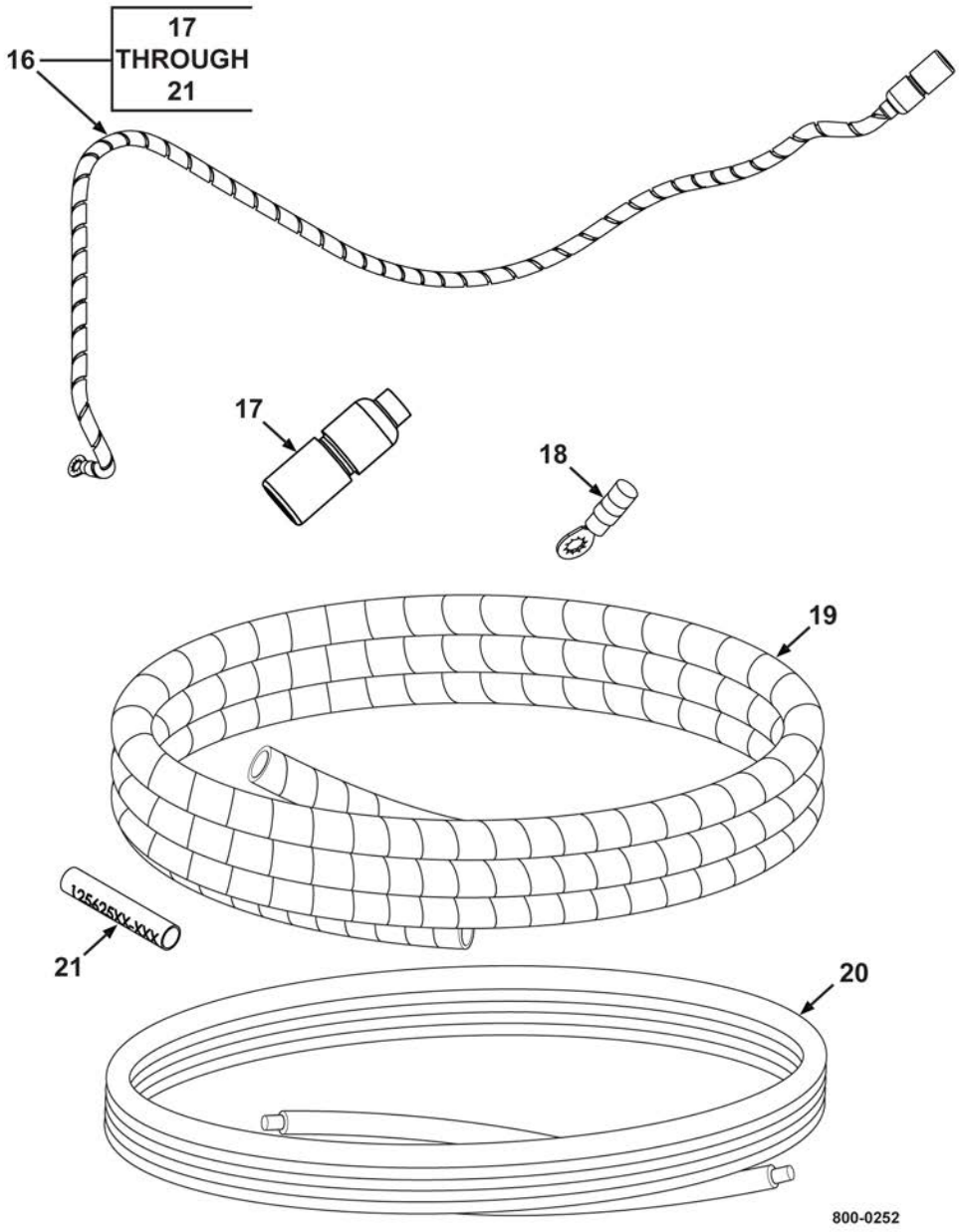


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 4 of 9)

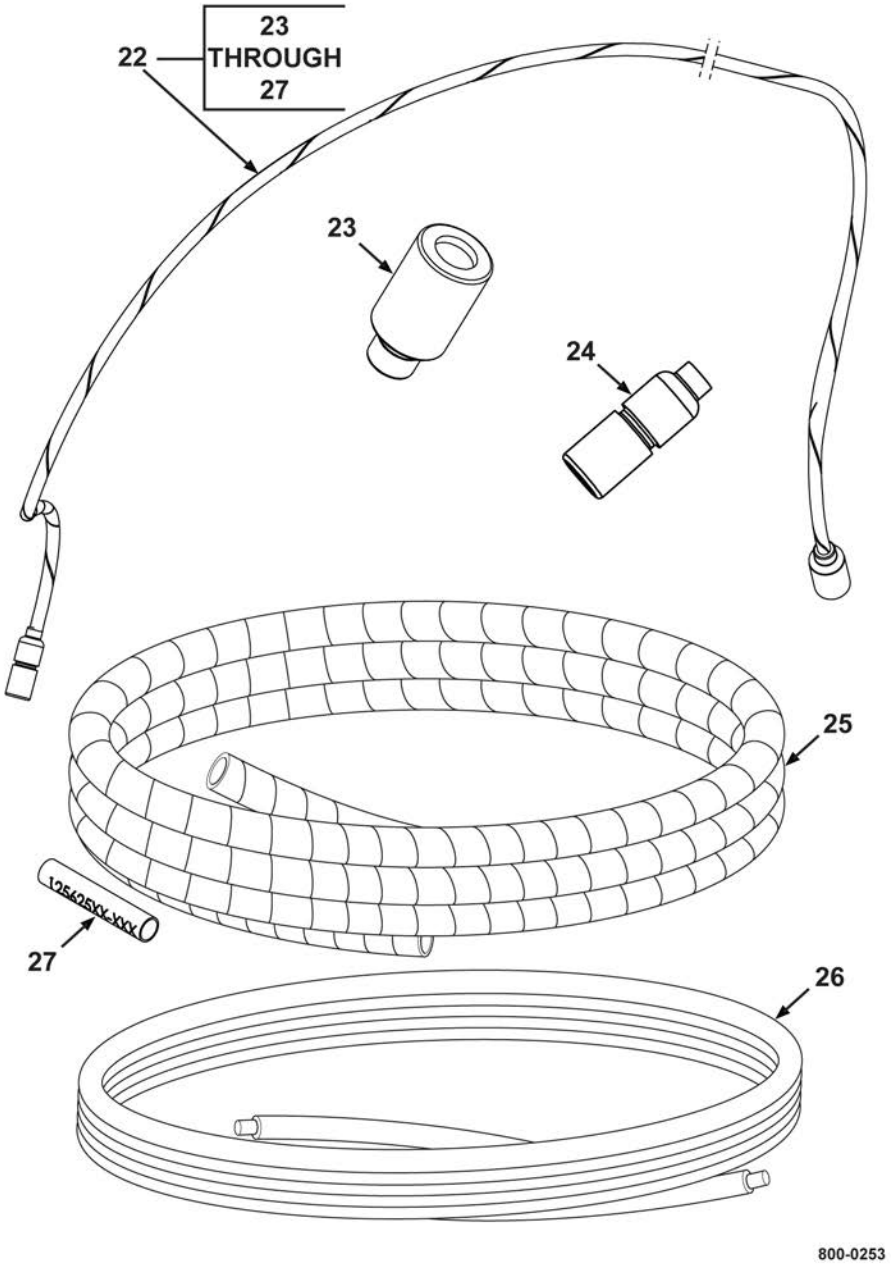


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 5 of 9)

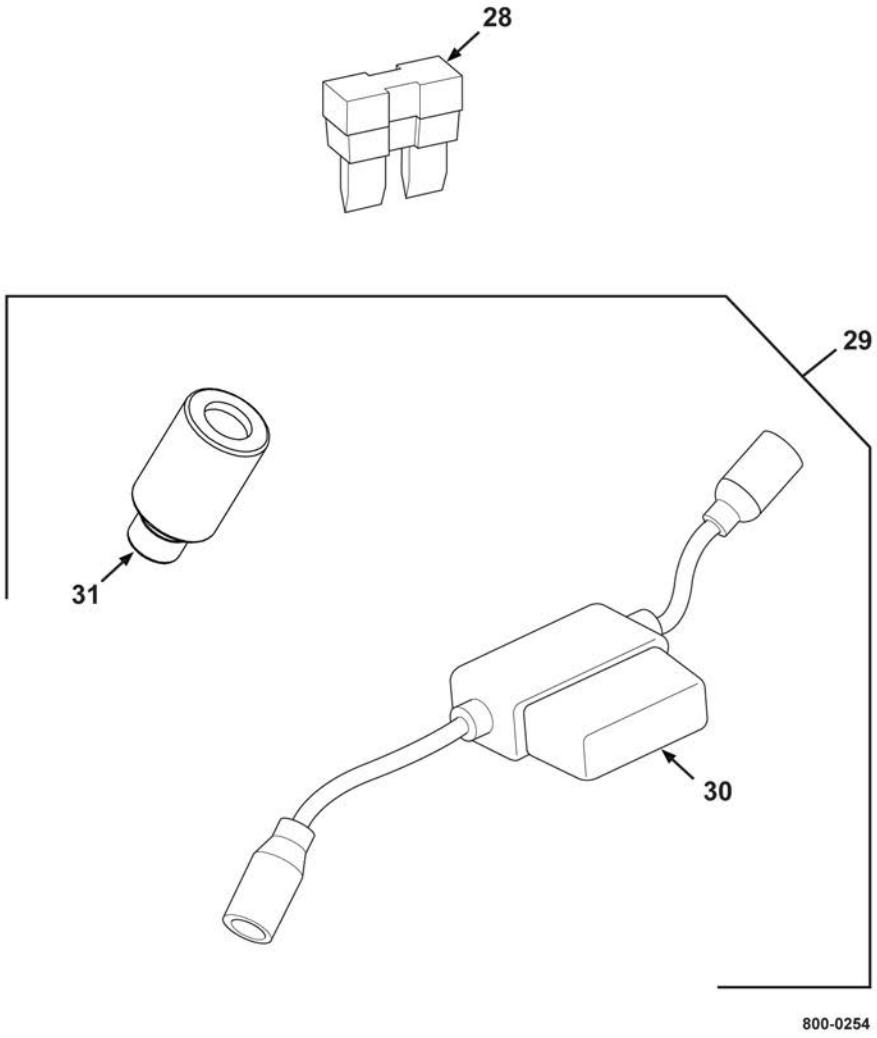


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 6 of 9)

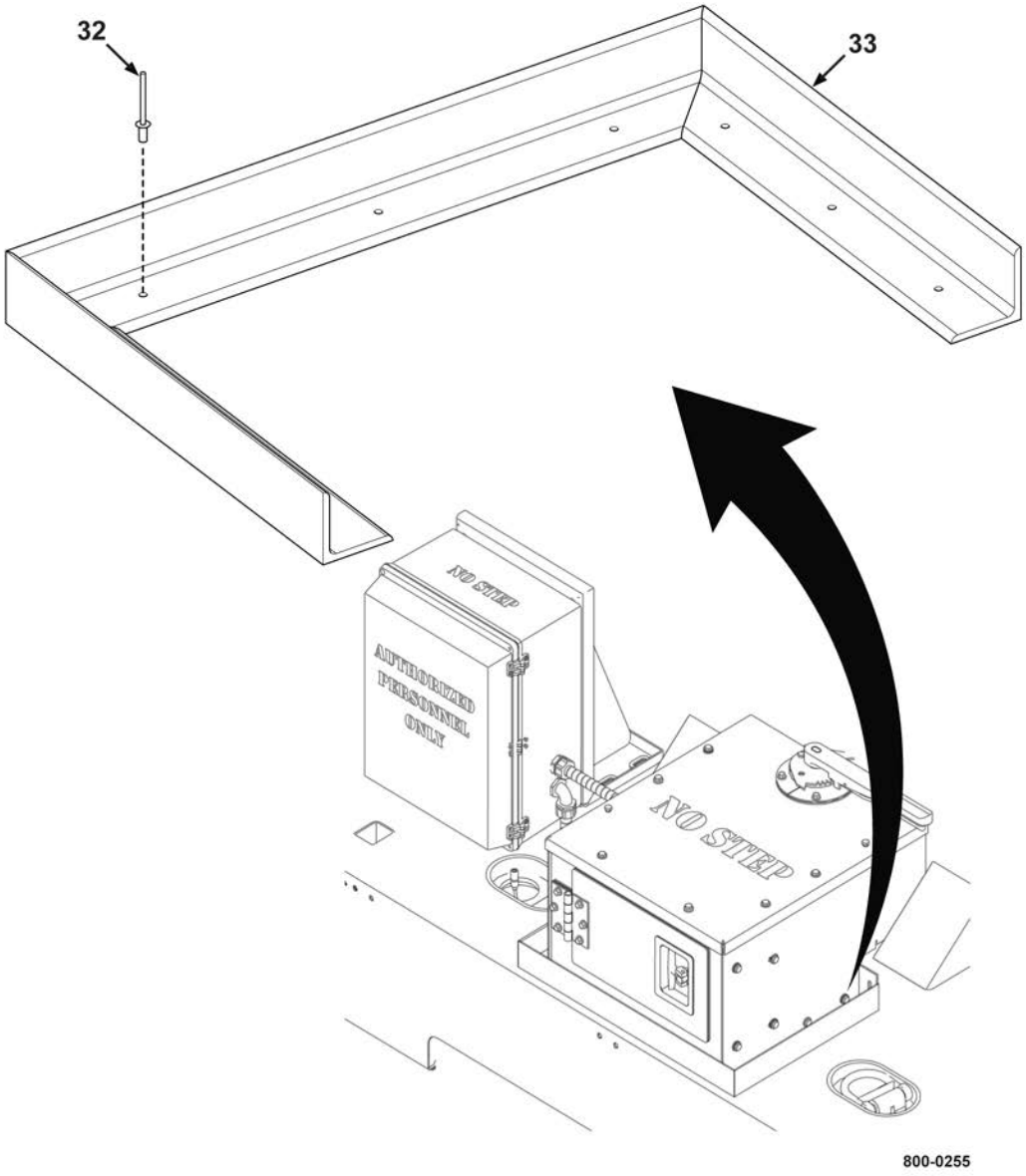


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 7 of 9)

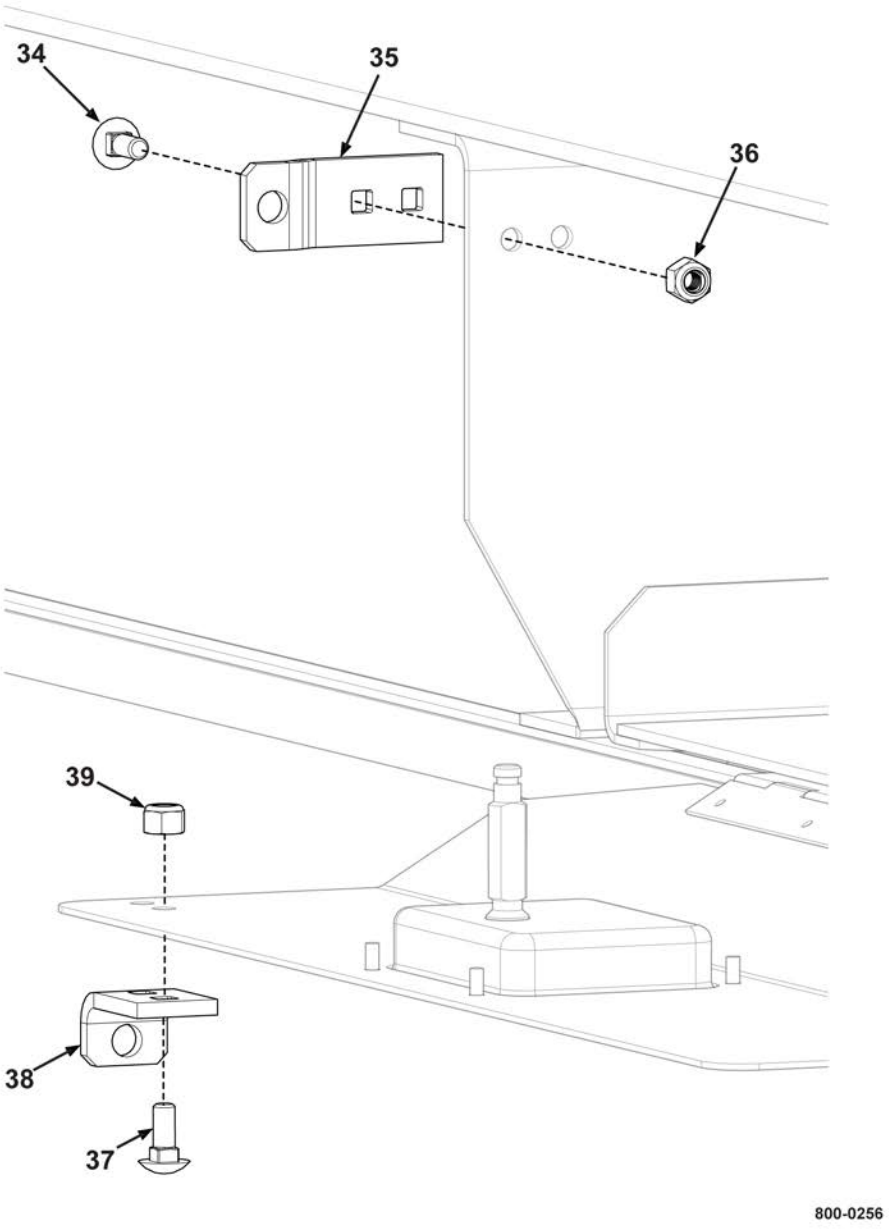


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 8 of 9)

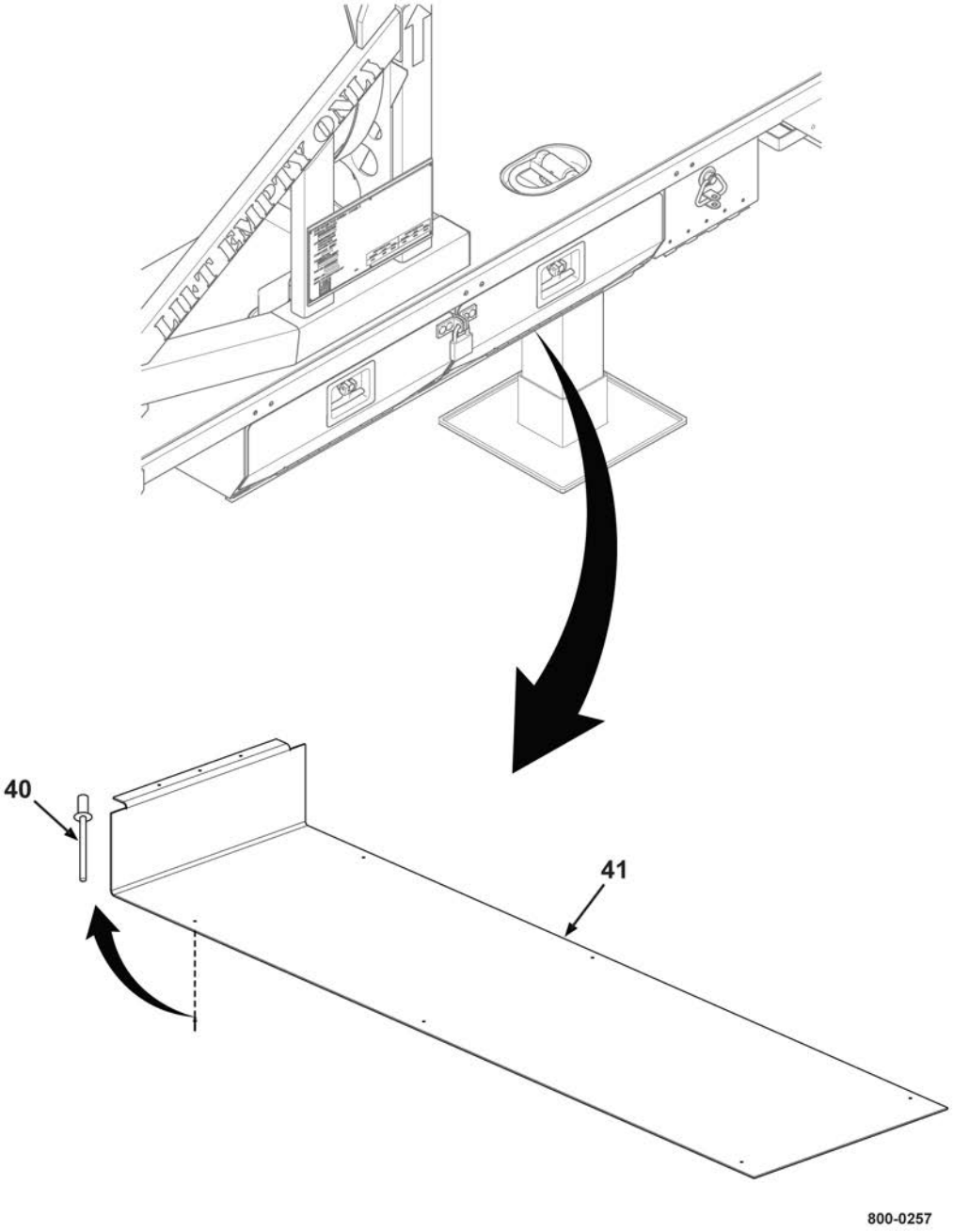


Figure 8. MODIFIED, M1095 TRAILER ASSEMBLY (Sheet 9 of 9)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 02 MODIFIED, M1095 TRAILER ASSEMBLY	
					FIG. 8. MODIFIED, M1095 TRAILER ASSEMBLY	
1	PDFFF	2330-01-449-1776	19207	8750340	TRAILER FLAT BED, COMPLETE MODIFICATION, M1095 TRAILER, PN: 19207: 12562454 UOC: UWP	1
2	XDFFF		19207	12562496	. MOUNTING PIN ASSY FRAME UOC: UWP	4
3	PAFZZ	5340-01-609-5969	19207	12562493	. . STANDOFF THREADED, SNAP-IN, MOUNTING PIN ASSEMBLY UOC: UWP	1
4	PAFZZ	5340-01-620-0351	19207	12562495	. . LOCK BAR PIN, MOUNTING FRAME UOC: UWP	1
5	PAFZZ	5325-01-518-7045	39428	90177A223	. . RING RETAINING, MOUNTING PIN UOC: UWP	2
6	PAFZZ	4010-01-587-5554	3A054	30345T31	. . WIRE ROPE ASSEMBLY SINGLE LEG, MOUNTING PIN UOC: UWP	1
7	PAFZZ		39428	9267K35	. . PROTECTIVE CAP STOWAGE DRAWER MOUNTING PIN ASSEMBLY UOC: UWP	1
8	PAFZZ	5310-01-621-4169	0Y3H3	0147963	. . NUT PLAIN, HEXAGON, 1 IN -8UNC-2B, ZINC PLATED, FINISHED SAE J995 UOC: UWP	2
9	PAFZZ	5365-01-608-8113	19207	12562494	. . BUSHING BLANK UOC: UWP	1
10	PAFFF	5995-01-622-1849	4D3B0	12562593-001	. CABLE ASSEMBLY RADIO FREQUENCY, WIRING HARNESS, 501, TRAILER MODIFICATION, GREEN, TRAILER GROUND UOC: UWP	1
11	PAFZZ	5935-00-167-7775	96906	MS27144-1	. . CONNECTOR PLUG, ELECTRICAL, MALE UOC: UWP	1
12	PAFZZ	5940-01-619-9521	39428	7113K453	. . TERMINAL LUG, ELECTRICAL, RING TERMINAL, 14-16 AWG, #6 UOC: UWP	1
13	MFFZZ		09106	HT 1/4UR	. . TUBING SPIRAL WRAP, 1/4 IN , MAKE FROM BULK P/N HT1-4UR (09106), CUT TO LENGTH UOC: UWP	V

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
14	MFFZZ		39428	7587K95	. . WIRE ELECTRICAL, GREEN, 14 GAUGE, 27.5 IN , MAKE FROM BULK P/N 7587K95 (39428), CUT TO LENGTH UOC: UWP	1
15	PFFZZ	7690-01-620-8303	19207	12562594-001	. . LABEL WIRE MARKER, 501, TRAILER HARNESS UOC: UWP	1
16	PAFFF	6150-01-620-8448	19207	12562593-002	. WIRING HARNESS 502, TRAILER MODIFICATION, BLACK, CONVERTER TO FUSE LINK UOC: UWP	1
17	PAFZZ	5935-00-167-7775	96906	MS27144-1	. . CONNECTOR PLUG, ELECTRICAL, MALE UOC: UWP	1
18	PAFZZ	5940-01-619-8810	39428	7113K455	. . TERMINAL LUG, ELECTRICAL, TERMINAL RING, 14-16 AWG, #10 UOC: UWP	1
19	MFFZZ		09106	HT 1/4UR	. . TUBING SPIRAL WRAP, 1/4 IN , MAKE FROM BULK P/N HT1-4UR (09106), CUT TO LENGTH UOC: UWP	V
20	MFFZZ		81349	M13486/1-5	. . WIRE ELECTRICAL, BLACK, 14 GAUGE, 27.5 IN , MAKE FROM BULK P/N M13486/1-5 (81349), CUT TO LENGTH UOC: UWP	1
21	PFFZZ	9330-01-627-2150	19207	12562594-002	. . SLEEVE HEAT SHRINKABLE, WIRE MARKER LABEL, 502, TRAILER HARNESS UOC: UWP	1
22	PAFFF	6150-01-620-8476	19207	12562593-003	. WIRING HARNESS 503, TRAILER MODIFICATION, BLACK, FUSE LINK TO ELECTRICAL JUNCTION UOC: UWP	1
23	PAFZZ	5935-00-462-6603	96906	MS27142-2	. . CONNECTOR PLUG, ELECTRICAL, FEMALE UOC: UWP	1
24	PAFZZ	5935-00-167-7775	96906	MS27144-1	. . CONNECTOR PLUG, ELECTRICAL, MALE UOC: UWP	1
25	MFFZZ		09106	HT 1/4UR	. . TUBING SPIRAL WRAP, 1/4 IN , MAKE FROM BULK P/N HT1-4UR (09106), CUT TO LENGTH UOC: UWP	V

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
26	MFFZZ		81349	M13486/1-5	. . WIRE ELECTRICAL, MAKE FROM BULK P/N M13486/1-5 (81349), CUT TO LENGTH UOC: UWP	1
27	PFFZZ	7690-01-620-8491	19207	12562594-003	. . LABEL WIRE MARKER, 503, TRAILER HARNESS UOC: UWP	1
28	PAFZZ	5920-01-619-8819	39428	7460K42	. FUSE INDICATOR ALARM, 4A, 32V AC/DC, ATC UOC: UWP	1
29	XDFFF		19207	12562603	. LINK ASSEMBLY FUSIBLE UOC: UWP	1
30	PAFZZ	5920-01-621-4125	81834	82-2209	. . FUSEHOLDER EXTRACTOR POST, FUSIBLE LINK UOC: UWP	1
31	PAFZZ	5935-00-462-6603	96906	MS27142-2	. . CONNECTOR PLUG, ELECTRICAL, FEMALE UOC: UWP	2
32	PAFZZ	5310-01-579-6922	3A054	97524A108	. NUT PLAIN, BLIND, RIVET, DOMED, 3/16 IN DIA, 0.5 IN GRIP UOC: UWP	10
33	PFFZZ	5340-01-620-5338	19207	12562461	. BRACKET SET ANGLE, DECK SKIRT, DISCHARGE HOUSING UOC: UWP	1
34	PAFZZ	5306-01-619-9332	39428	93548A530	. BOLT SQUARE NECK, CARRIAGE, .25-20 X .5L UOC: UWP	2
35	PFFZZ	5340-01-620-0622	19207	12562497-002	. BRACKET MOUNTING STOWAGE LOCK UOC: UWP	1
36	PAFZZ	5310-01-416-1851	39428	91831A029	. NUT SELF-LOCKING, HEXAGON UOC: UWP	2
37	PAFZZ	5306-01-619-9332	39428	93548A530	. BOLT SQUARE NECK, CARRIAGE, .25-20 X .5L UOC: UWP	4
38	PFFZZ	5340-01-620-0112	19207	12562497-001	. BRACKET ANGLE, L-SHAPED, STOWAGE LOCK UOC: UWP	2
39	PAFZZ	5310-01-626-0089	5CQW8	8C69268Z	. NUT SELF-LOCKING, HEXAGON, ZNC PLT, NYLON INSERT, FLANGE, M8 X 1.25 UOC: UWP	4
40	PAFZZ	5320-01-581-6991	39428	97525A490	. RIVET BLIND, 18-8 SS, DOMED, 3/16 IN DIA, 0.25 IN GRIP UOC: UWP	6

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
41	PAFZZ	8145-01-608-4458	19207	12562463	. PANEL BOTTOM, STOWAGE BOX UOC: UWP	2

END OF FIGURE

FIELD MAINTENANCE
WATER TANK ASSEMBLY

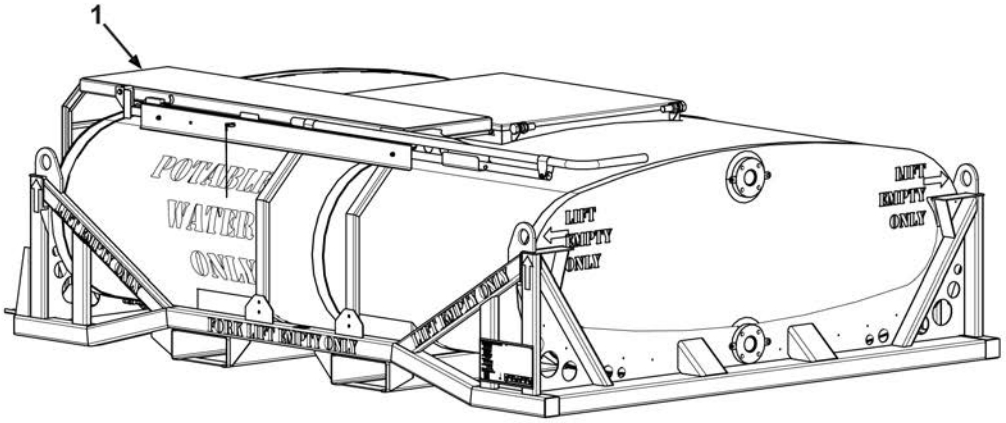


Figure 9. WATER TANK ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 03 WATER TANK ASSEMBLY	
					FIG. 9. WATER TANK ASSEMBLY	
1	XDFHH		19207	12562460	CAMEL II WATER TANK ASSEMBLY UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
TANK, FRAME AND CLADDING ASSEMBLY

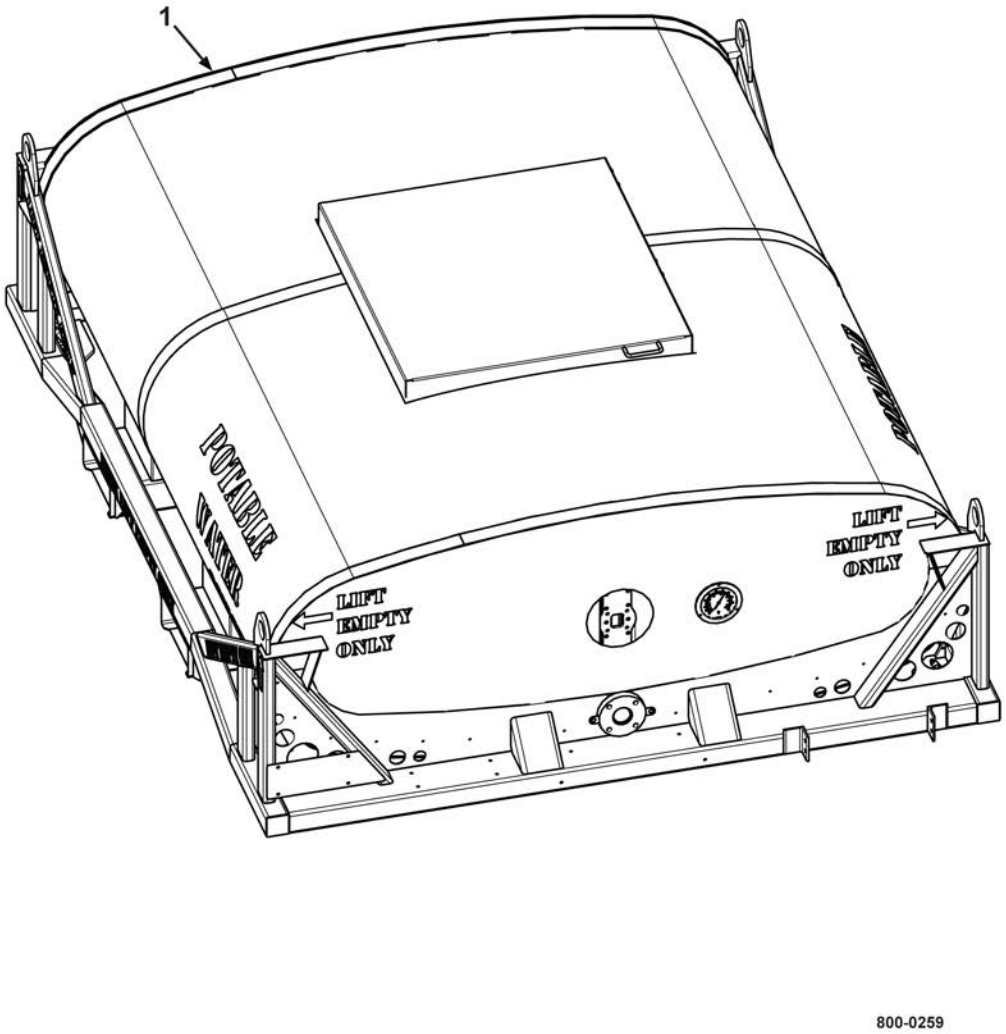


Figure 10. TANK, FRAME AND CLADDING ASSEMBLY (Sheet 1 of 5)

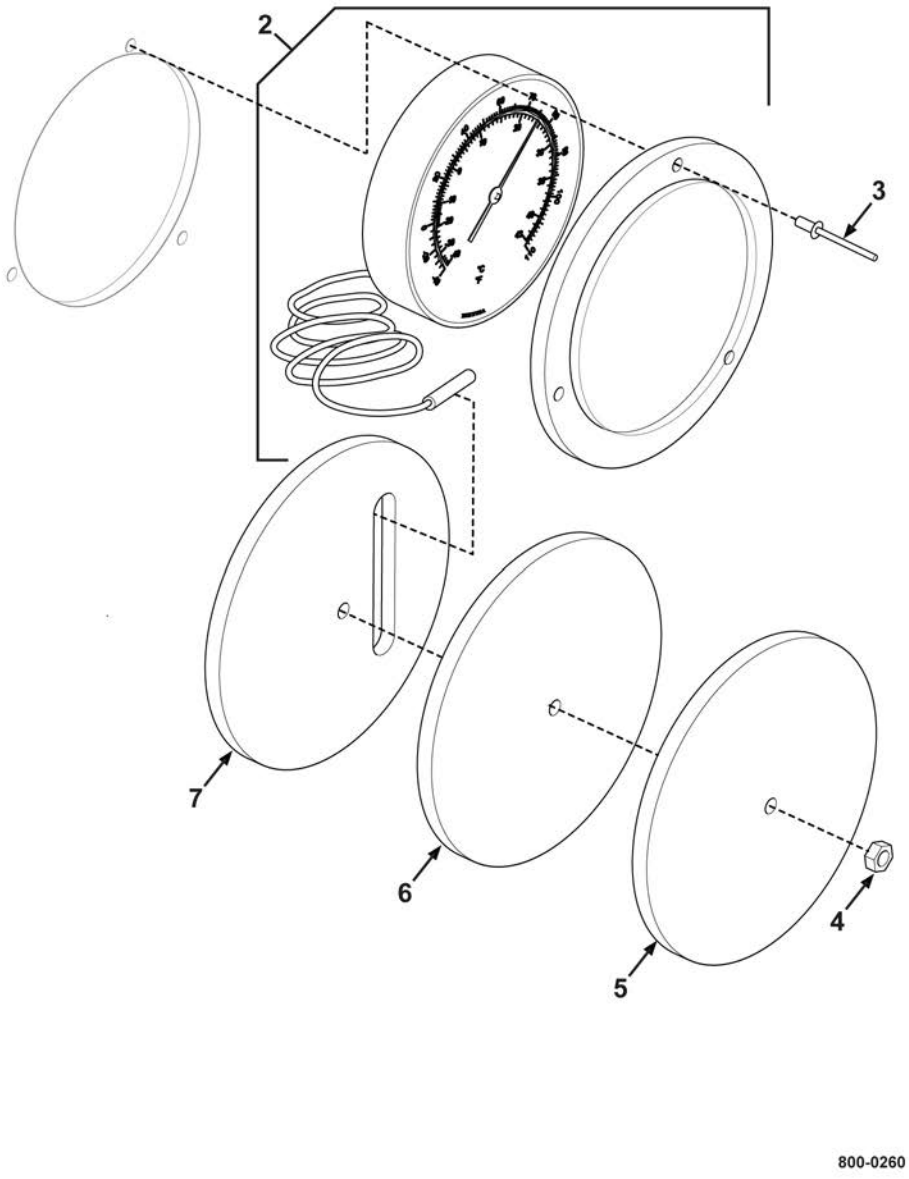


Figure 10. TANK, FRAME AND CLADDING ASSEMBLY (Sheet 2 of 5)

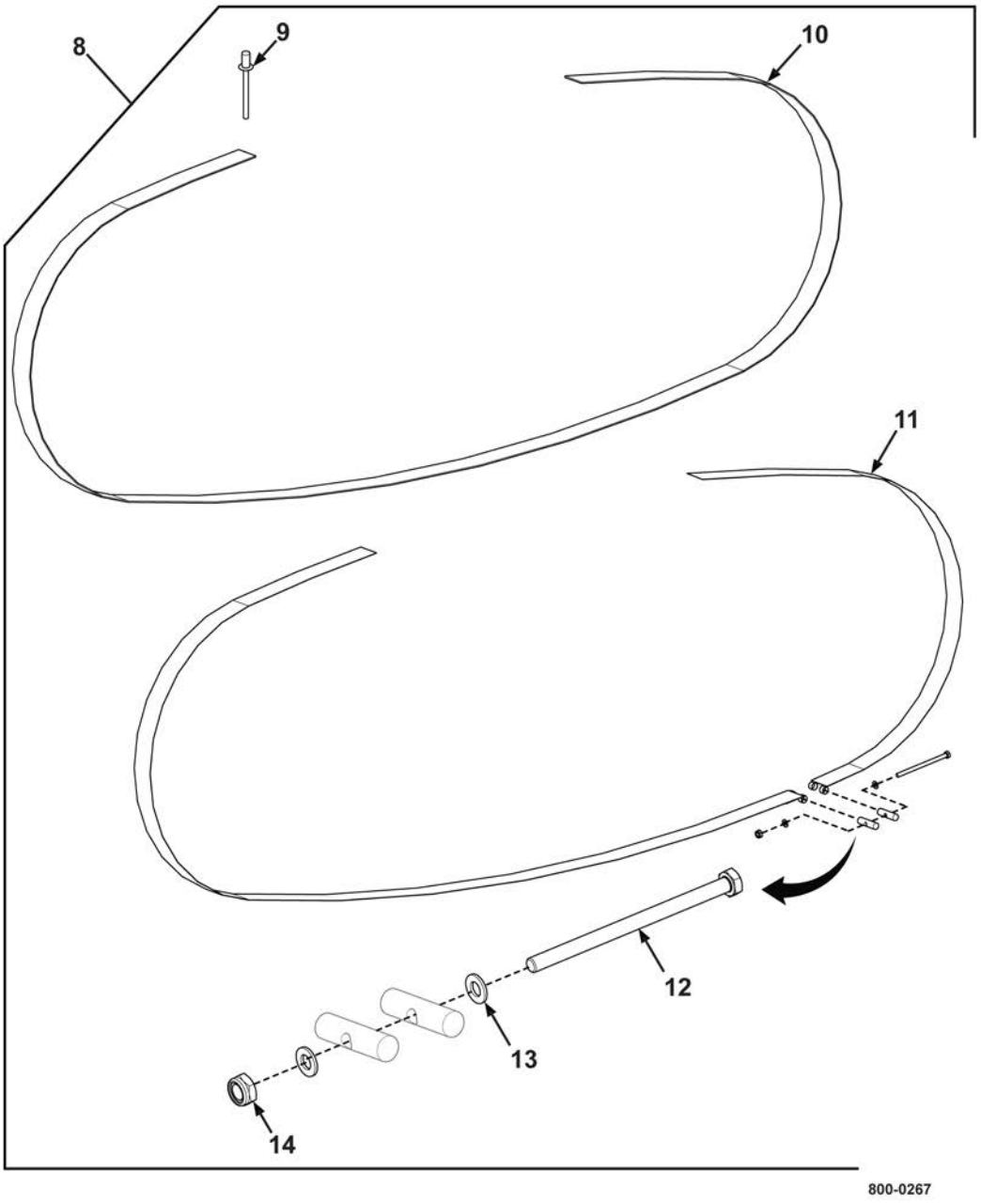


Figure 10. TANK, FRAME AND CLADDING ASSEMBLY (Sheet 3 of 5)

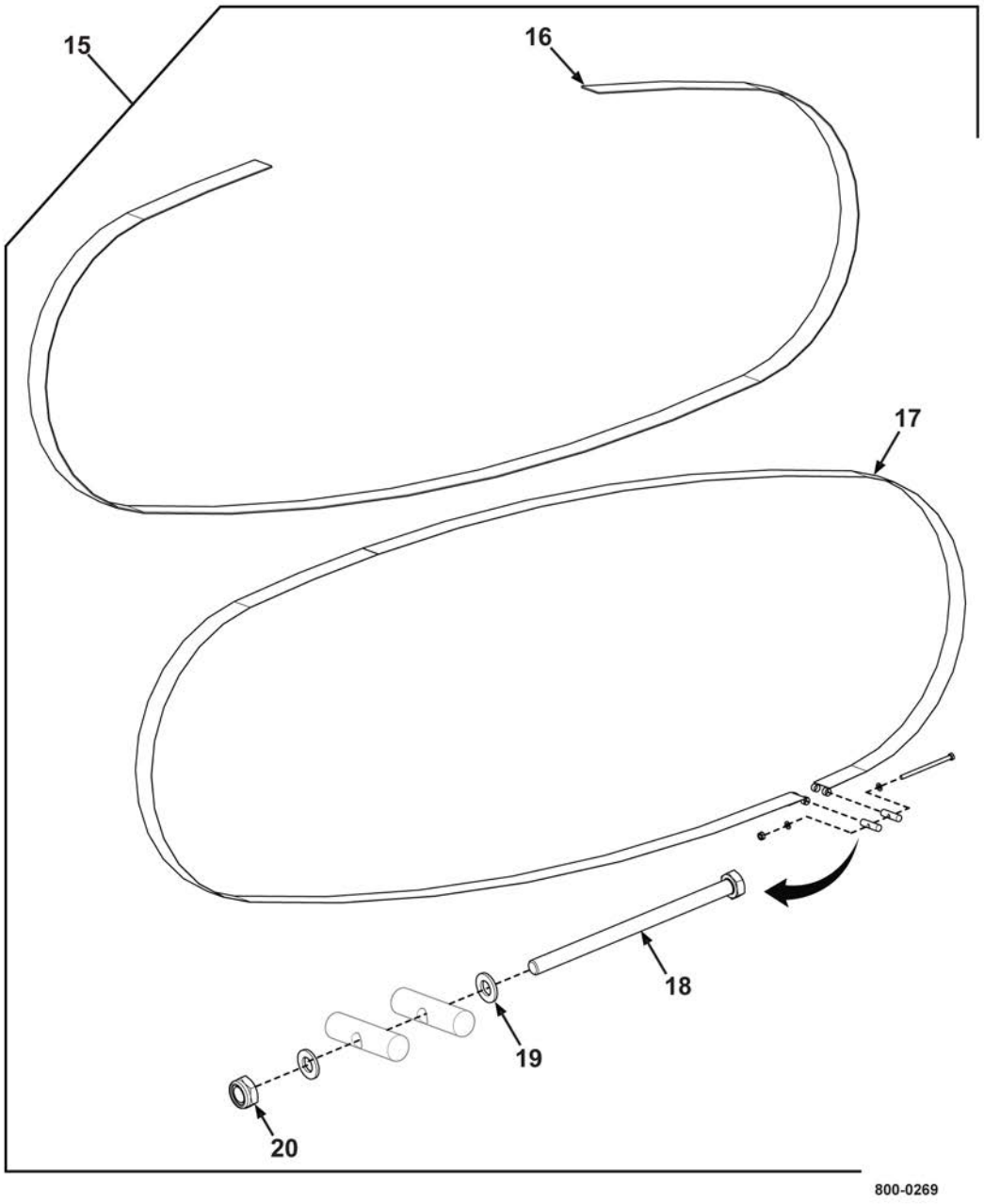


Figure 10. TANK, FRAME AND CLADDING ASSEMBLY (Sheet 4 of 5)

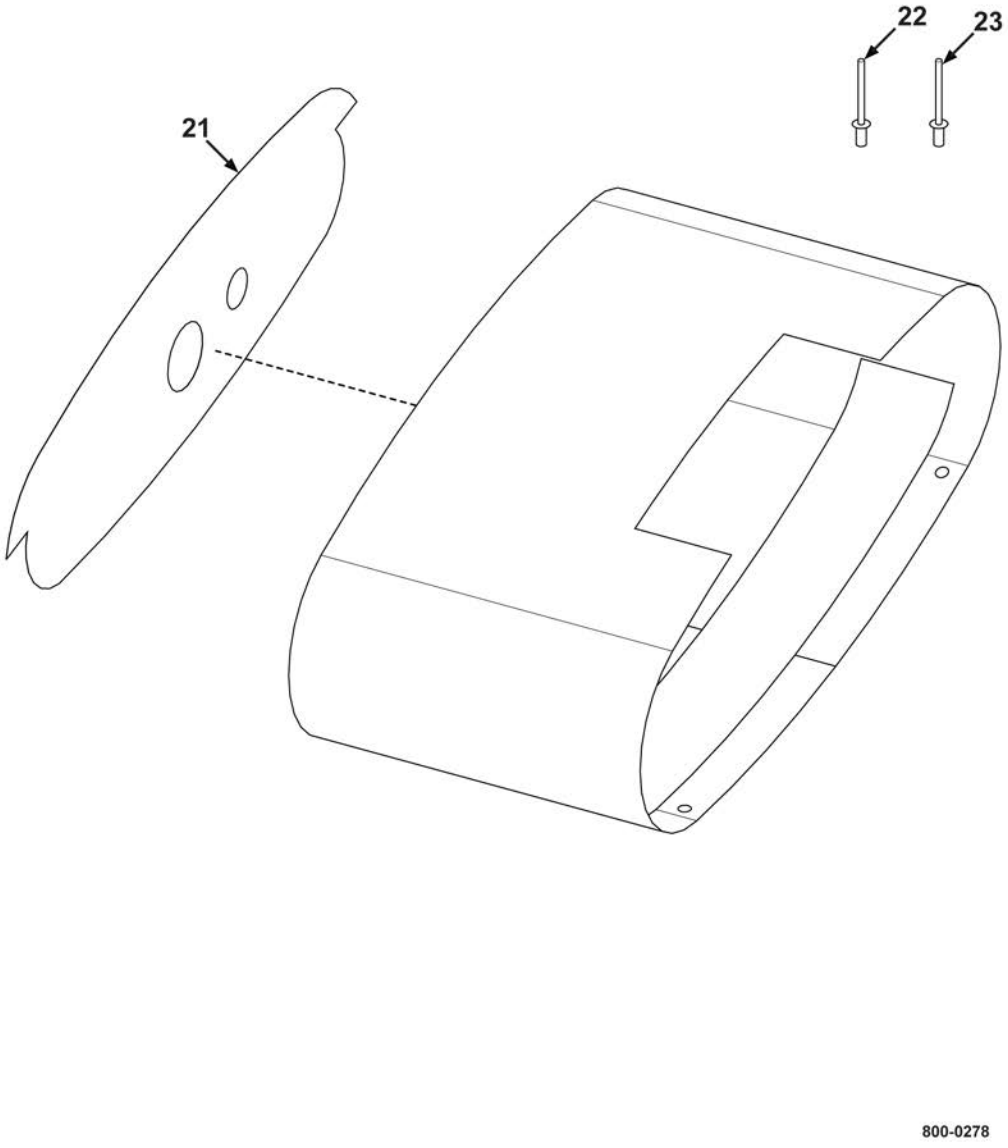


Figure 10. TANK, FRAME AND CLADDING ASSEMBLY (Sheet 5 of 5)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0301 TANK, FRAME AND CLADDING ASSEMBLY	
					FIG. 10. TANK, FRAME AND CLADDING ASSEMBLY	
1	PBFHH	2510-01-624-5460	19207	12562542	TANK UNIT WATER DISPENSING, VEHICULAR MOU, FRAME AND CLADDING ASSY, CAMEL II UOC: UWP	1
2	PFFZZ	6685-01-620-1586	19207	12562528	. GAGE RECEIVER PRESSURE, PNEUMATIC, WATER TEMPERATURE INDICATOR, SENSOR UOC: UWP	1
3	PAFZZ	5320-01-585-3144	39428	97524A107	. RIVET BLIND, ALUM/STL, DOMED 3/16 IN DIA, 0.375 IN GRIP UOC: UWP	3
4	PAFZZ	5310-01-620-0203	39428	94205A260	. NUT SELF-LOCKING, HEXAGON, M8 - 1.25 NYLON INSERT UOC: UWP	1
5	PFFZZ	5310-01-620-3621	4D3B0	12562457	. WASHER FLAT, TEMPERATURE/ THERMOSTAT SENSOR, METAL UOC: UWP	1
6	PFFZZ	5310-01-622-1005	19207	12562456-01	. WASHER FLAT, TEMPERATURE SENSOR, FOAM UOC: UWP	1
7	PFFZZ	6220-01-621-2406	19207	12562456-03	. LIGHTING KIT VEHICULAR, BULB FIXTURE, TEMPERATURE SENSOR, SLOTTED FOAM UOC: UWP	1
8	PAFFF	5340-01-620-7063	19207	12562490	. STRAP RETAINING, CENTER STRAP ASSY, CLADDING, OUTER SHELL UOC: UWP	1
9	PAFZZ	5320-01-626-1025	5B5M3	11A7000848	RIVET BLIND, 120 DEG, COUNTERSUNK, .188 DIA X .375 GRIP UOC: UWP	11
10	PFFZZ	5330-01-620-3143	19207	12562465-02	. . SEAL NONMETALLIC SPECIAL SHAPED SECTION, CLADDING STRIP, RUBBER UOC: UWP	1
11	PFFZZ	5340-01-625-9068	19207	12562486	. . STRAP RETAINING, CENTER, CLADDING, OUTER SHELL UOC: UWP	2
12	PAFZZ	5306-01-625-0261	3Q6H0	TAPG8ZY14204	. . BOLT MACHINE, HEX HEAD, GR 8, 1/4 IN -20X4 IN UOC: UWP	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
13	PAFZZ	5310-01-533-5638	39428	98023A029	. . WASHER FLAT, 14 IN , GRADE 8 YELLOW ZNC PLTD STL, USS & SAE (TYPE A) UOC: UWP	4
14	PAFZZ	5310-01-550-2509	3A054	94895A029	. . NUT PLAIN, HEXAGON UOC: UWP	2
15	XDFFF		19207	12562489	. END STRAP ASSEMBLY CLADDING WELDMENT, OUTER SHELL UOC: UWP	2
16	PFFZZ	5330-01-620-3149	19207	12562465-01	. . SEAL NONMETALLIC SPECIAL SHAPED SECTION, CLADDING STRIP, RUBBER UOC: UWP	1
17	PFFZZ	5340-01-626-1284	19207	12562485	. . STRAP RETAINING, END, CLADDING WELDMENT, OUTER SHELL UOC: UWP	2
18	PAFZZ	5306-01-625-0261	3Q6H0	TAPG8ZY14204	. . BOLT MACHINE, HEX HEAD, GR 8, 1/4 IN -20X4 IN UOC: UWP	2
19	PAFZZ	5310-01-533-5638	39428	98023A029	. . WASHER FLAT, 14 IN , GRADE 8 YELLOW ZNC PLTD STL, USS & SAE (TYPE A) UOC: UWP	4
20	PAFZZ	5310-01-550-2509	3A054	94895A029	. . NUT PLAIN, HEXAGON UOC: UWP	2
21	PFFZZ	5430-01-620-4786	19207	12562487-01	. TANK SECTION FLUID, END CAP, REAR UOC: UWP	1
22	PAFZZ	5320-01-585-4552	39428	97524A029	RIVET BLIND, SEALING, 3/16 IN DIA X .25 GRIP UOC: UWP	26
23	PAFZZ	5320-01-472-5234	39428	97524A026	RIVET BLIND, SEALING, 1/8 IN DIA X .125 GRIP UOC: UWP	20

END OF FIGURE

FIELD MAINTENANCE
WATER LEVEL INDICATOR GAUGE ASSEMBLY

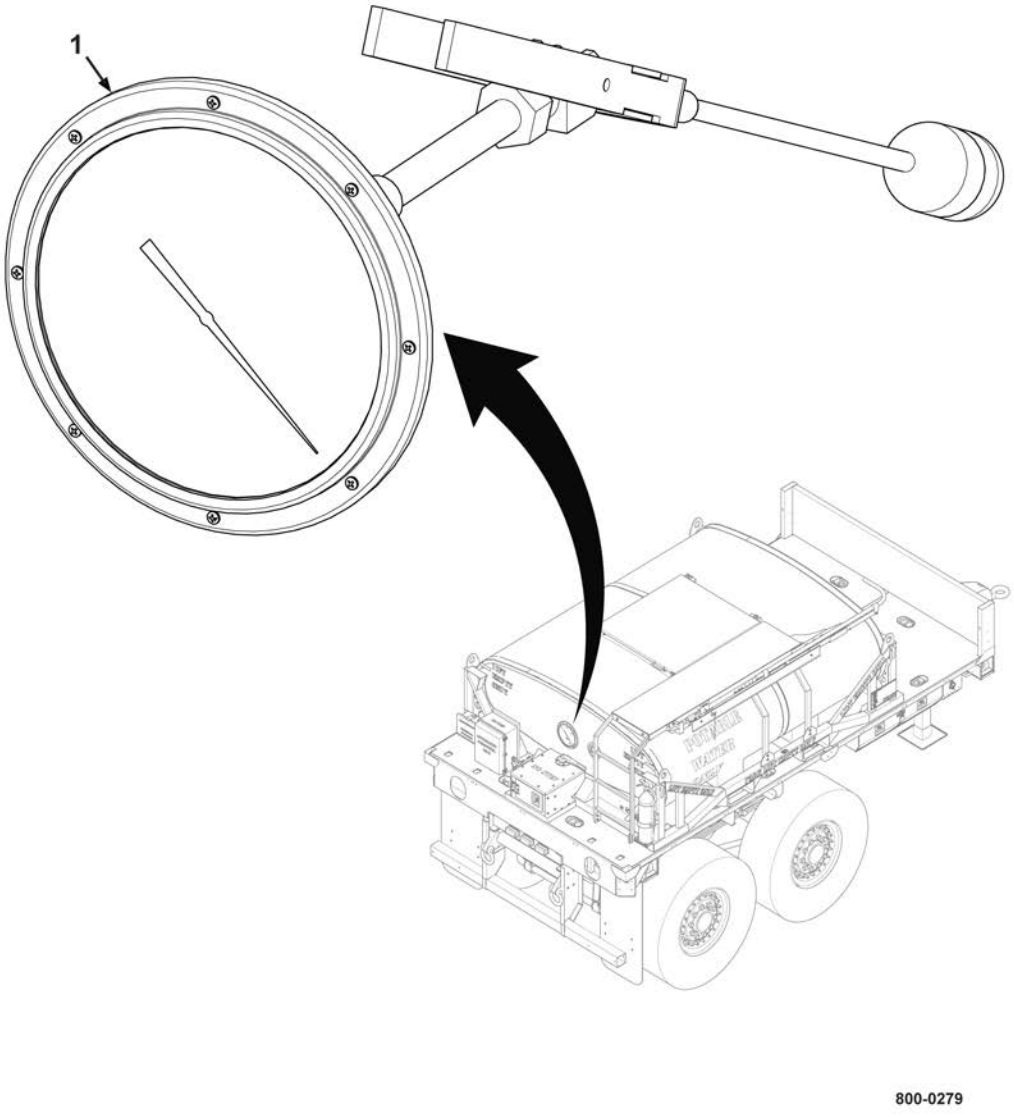


Figure 11. WATER LEVEL INDICATOR GAUGE ASSEMBLY (Sheet 1 of 3)

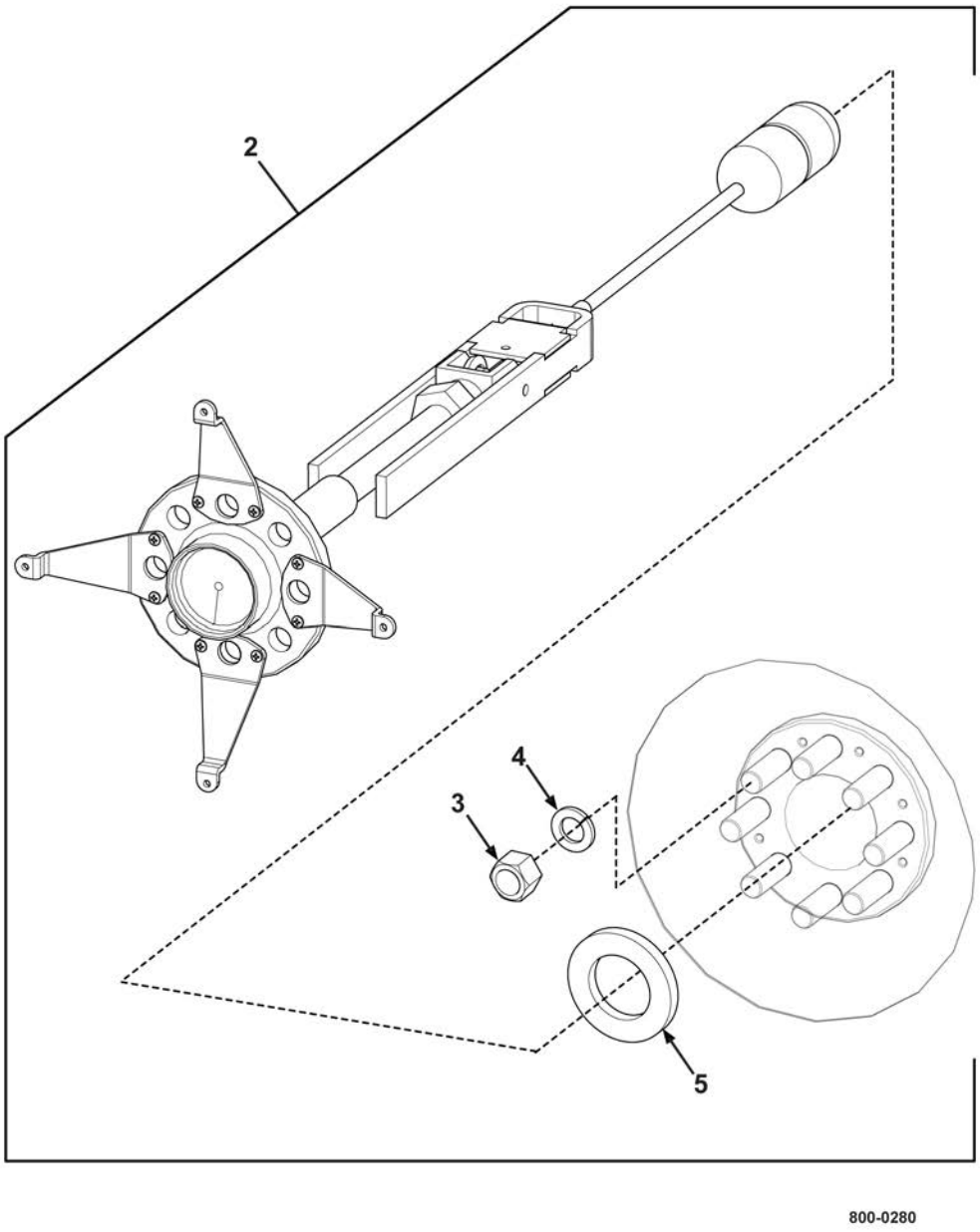


Figure 11. WATER LEVEL INDICATOR GAUGE ASSEMBLY (Sheet 2 of 3)

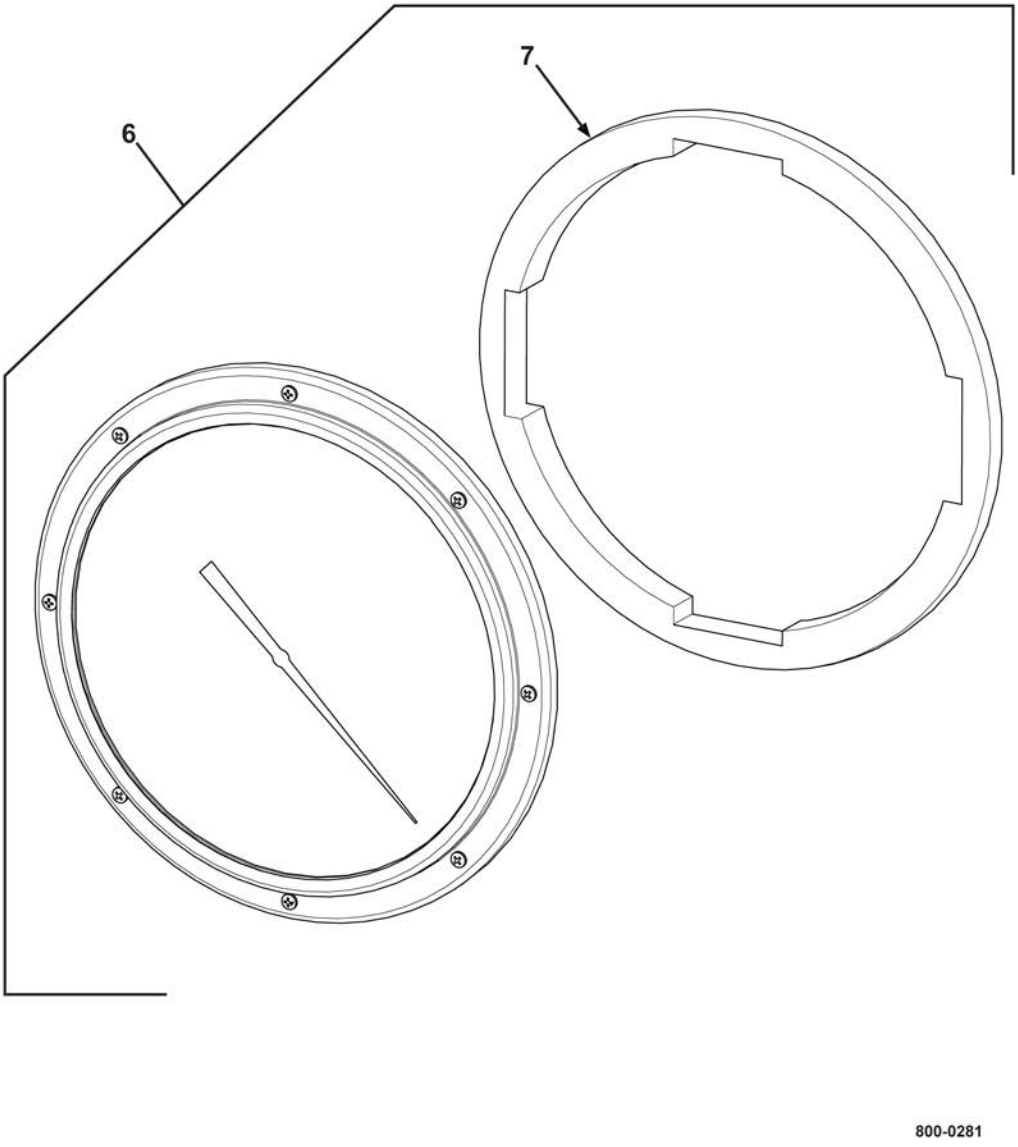


Figure 11. WATER LEVEL INDICATOR GAUGE ASSEMBLY (Sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0302 WATER LEVEL INDICATOR GAUGE ASSEMBLY	
					FIG. 11. WATER LEVEL INDICATOR GAUGE ASSEMBLY	
1	PAFFF	6680-01-620-6524	19207	12562608	INDICATOR LIQUID QUANTITY, WATER LEVEL UOC: UWP	1
2	PAFFF	6680-01-625-9672	19207	12562624	. GAGE LIQUID QUANTITY, FLOAD TYPE, GAGE MECHANISM ARM ASSY UOC: UWP	1
3	PAFZZ	5310-01-601-4292	39428	91828A420	. . NUT PLAIN, HEXAGON UOC: UWP	8
4	PAFZZ	5310-01-597-1614	39428	92153A436	. . WASHER LOCK UOC: UWP	8
5	PAFZZ	5330-01-625-9557	19207	12562531	. . PACKING PREFORMED, WATER LEVEL INDICATOR GASKET UOC: UWP	1
6	PAFFF	6680-01-625-9348	19207	12562609	. GAGE LIQUID QUANTITY, FLOAT TYPE, WATER LEVEL UOC: UWP	1
7	PAFZZ	5330-01-626-4472	19207	12562611	. . GASKET GAGE ASSEMBLY UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
FRONT FLANGE COVER

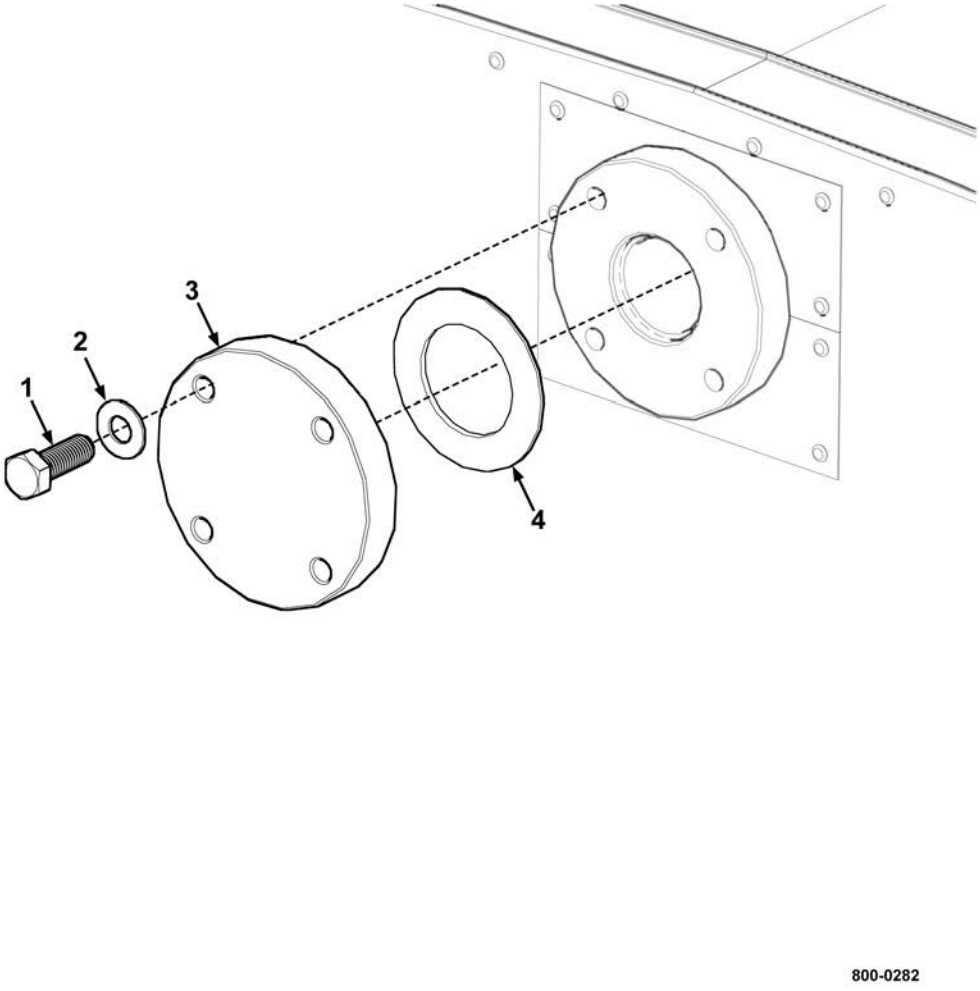


Figure 12. FRONT FLANGE COVER

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0303 FRONT FLANGE COVER	
					FIG. 12. FRONT FLANGE COVER	
1	PAFZZ	5305-01-620-7395	97852	2-H-62C-175	SCREW CAP, HEXAGON HEAD, 5/8 IN -11 X 1-3/4 IN UOC: UWP	8
2	PAFZZ	5310-01-559-8143	07BY4	91950A035	WASHER FLAT UOC: UWP	8
3	PFFZZ	4730-01-627-2002	62531	853-020	FLANGE PIPE, BEND, FLANGE COVER, 2 IN, FRONT UOC: UWP	2
4	PCFZZ	5330-01-626-0266	4X680	98206	GASKET FLANGE COVER UOC: UWP	2
					END OF FIGURE	

FIELD MAINTENANCE
SPILL BOX LID ASSEMBLY

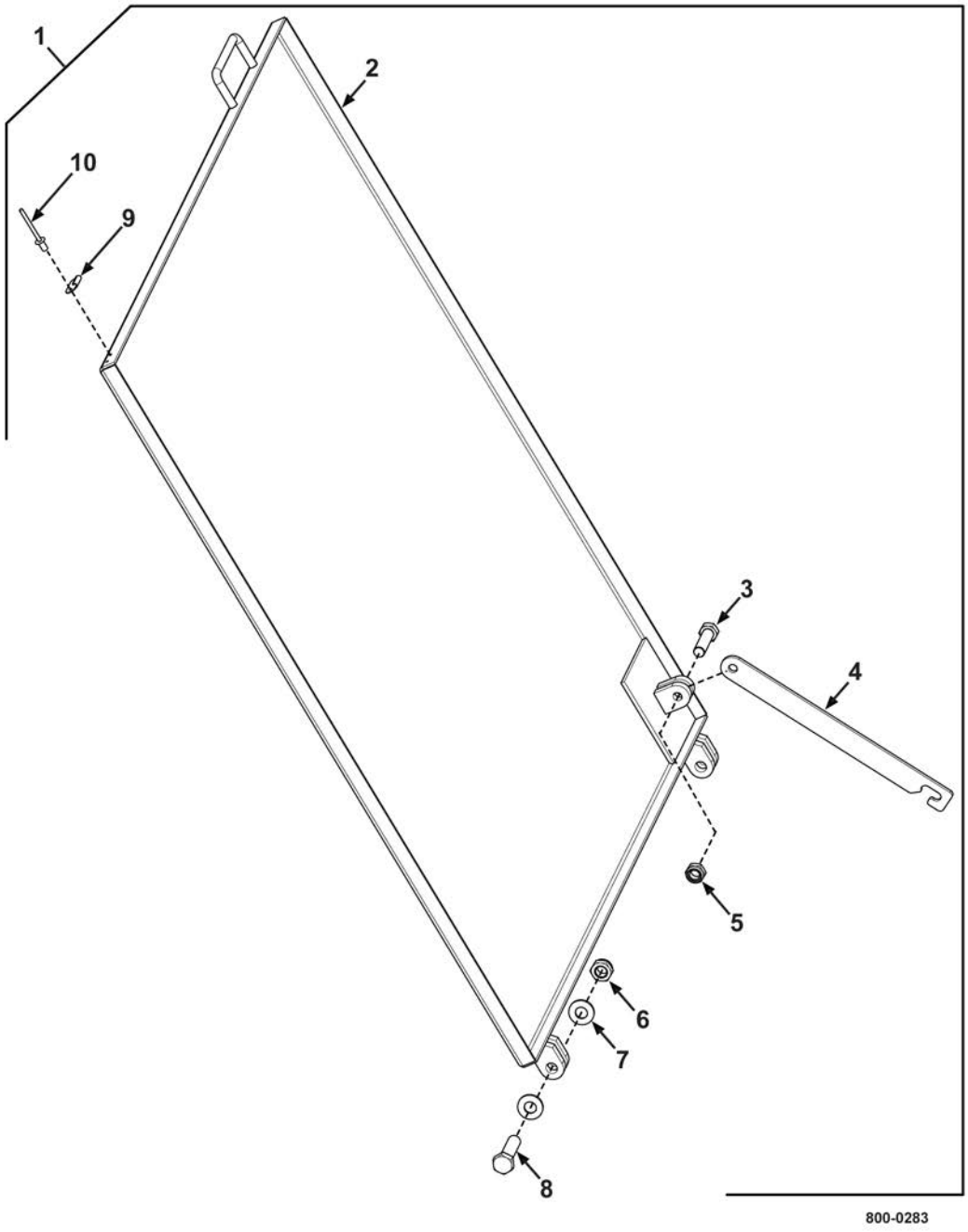


Figure 13. SPILL BOX LID ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0304 SPILL BOX LID ASSEMBLY	
					FIG. 13. SPILL BOX LID ASSEMBLY	
1	XDFFF		19207	12562541	ASSEMBLY SPILL BOX LID UOC: UWP	1
2	PFFZZ	5340-01-619-9987	19207	12562539	. COVER ACCESS, SPILL BOX LID UOC: UWP	1
3	PAFZZ	5306-01-620-0641	39428	93635A438	. BOLT MACHINE, CAP, HEX HEAD, SS, M10 X 40 UOC: UWP	1
4	PFFZZ	5340-01-626-5679	19207	12562541-1	. BRACKET MOUNTING, ARM, LOCKING, SPILL BOX UOC: UWP	1
5	PAFZZ	5310-01-553-3365	39428	94205A270	. NUT SELF-LOCKING, HEXAGON UOC: UWP	1
6	PAFZZ	5310-01-590-7614	39428	94205A280	. NUT SELF-LOCKING, HEXAGON, NYLON, SS, M12 X 45 UOC: UWP	2
7	PAFZZ	5310-01-523-3916	39428	90965A210	. WASHER FLAT UOC: UWP	4
8	PAFZZ	5305-01-620-8551	4D3B0	93635A528	. SCREW CAP, HEXAGON HEAD, M12 X 45 UOC: UWP	2
9	PAFZZ	5340-01-538-8645	39428	1406A43	. CATCH CLAMPING, DRAW, SS, PADLOCKABLE LATCH, .75 IN LATCH DISTANCE UOC: UWP	2
10	PAFZZ	5320-00-395-6523	81349	M24243/1-D403	. RIVET BLIND, STEEL, 0.126 IN GRIP UOC: UWP	4
					END OF FIGURE	

FIELD MAINTENANCE
RELIEF VALVE ASSEMBLY

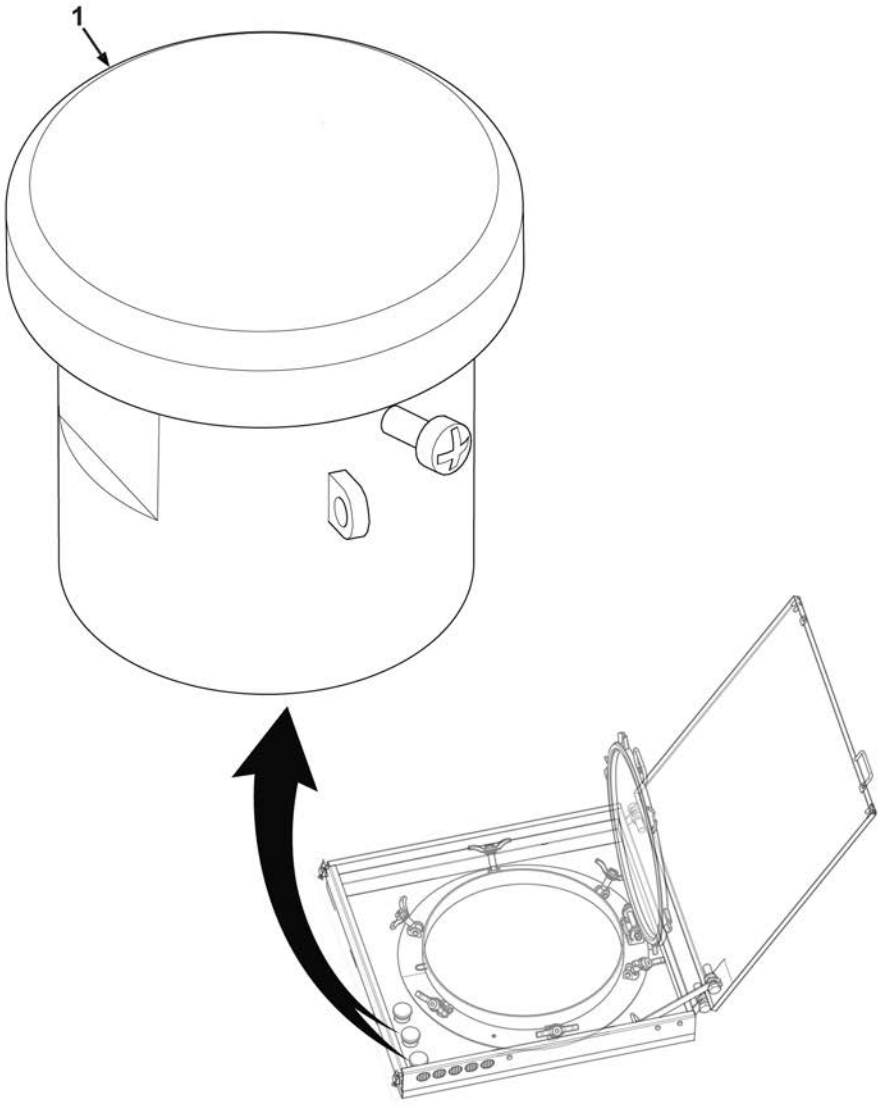


Figure 14. RELIEF VALVE ASSEMBLY (Sheet 1 of 2)

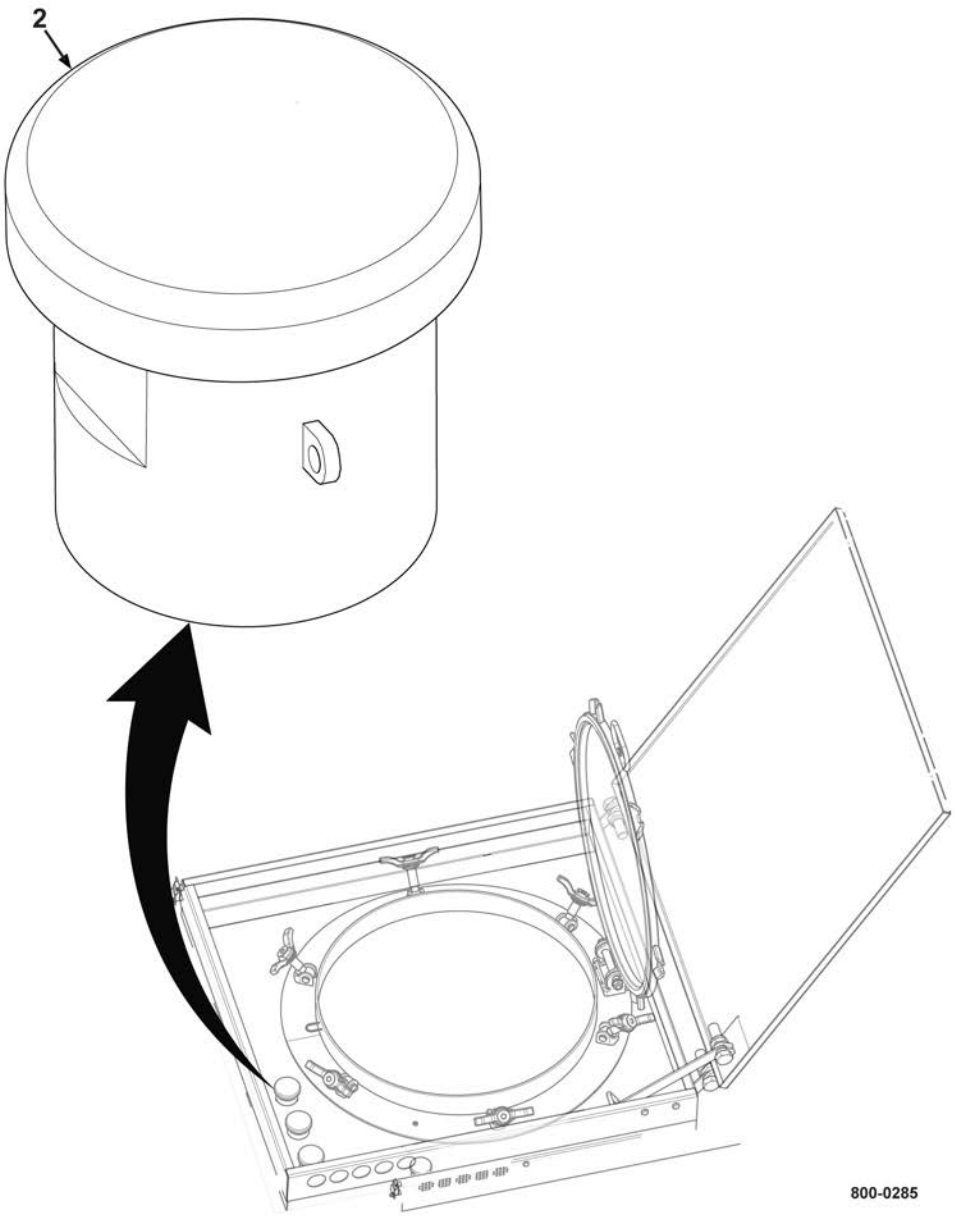


Figure 14. RELIEF VALVE ASSEMBLY (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0305 RELIEF VALVE ASSEMBLY	
					FIG. 14. RELIEF VALVE ASSEMBLY	
1	PAFZZ	4820-01-611-5301	66813	6133016220-041	VALVE SAFETY RELIEF UOC: UWP	2
2	PAFZZ		66813	6133016083-041	VALVE RELIEF, 2 WAY UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
MANHOLE COVER ASSEMBLY

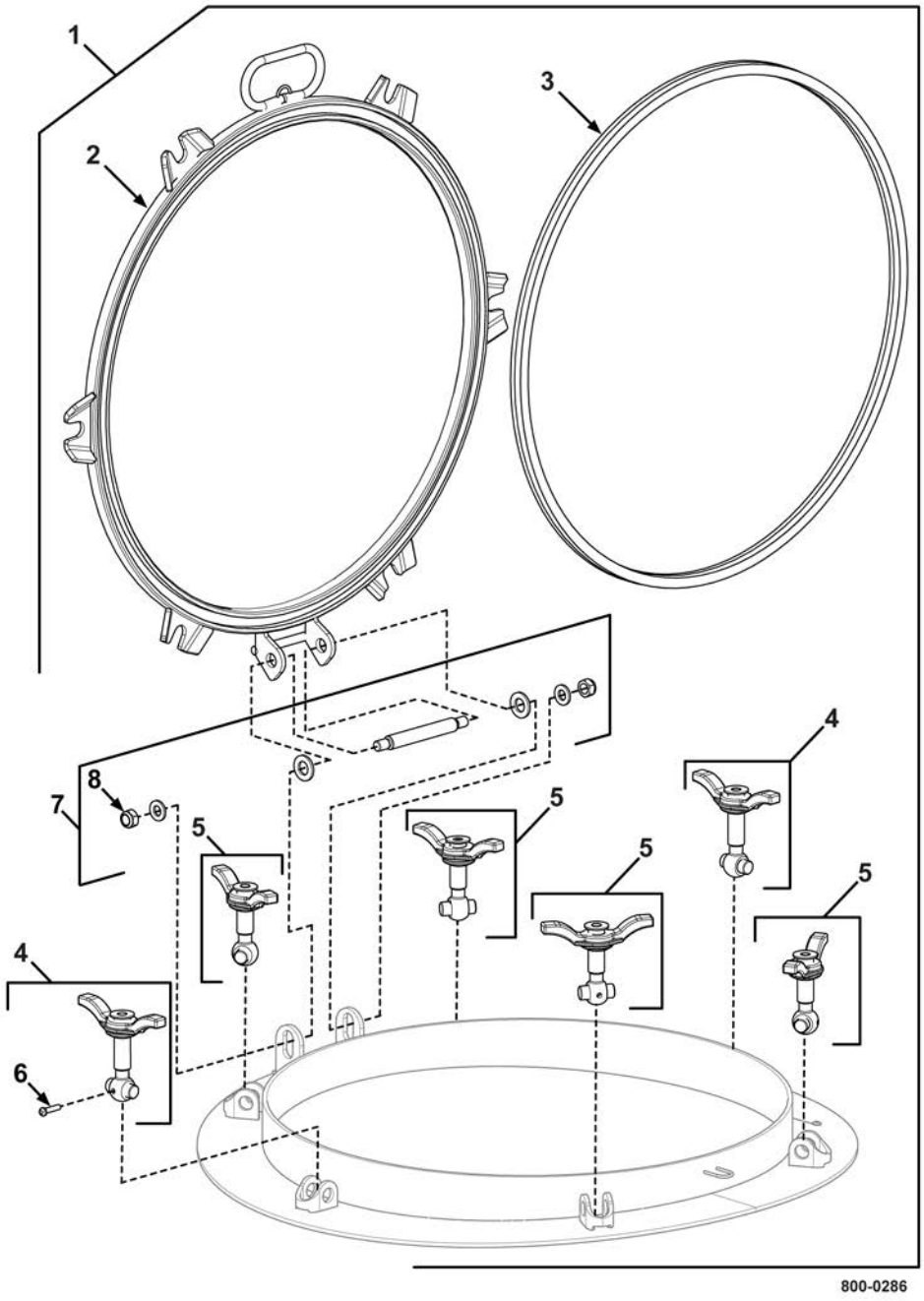


Figure 15. MANHOLE COVER ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0306 MANHOLE COVER ASSEMBLY	
					FIG. 15. MANHOLE COVER ASSEMBLY	
1	XDFFF		19207	12562554	ASSEMBLY MANHOLE COVER UOC: UWP	1
2	PFFZZ	2510-01-626-2230	4D3B0	C04V600606	. COVER MANHOLE, DN600 UOC: UWP	1
3	PAFZZ	5330-01-626-4519	4D3B0	C04V600GSK	. GASKET MANHOLE COVER SEAL, ND600 TANKSEAL, WHITE, NITRILE RUBBER, 15 X 14.5MM UOC: UWP	1
4	PAFZZ	2540-01-627-4777	4D3B0	C04V000205-A	. LATCH ASSEMBLY WINDOW, VEHICULAR, BOLT, 90 MM LONG, WITH BRASS WING NUT UOC: UWP	2
5	PAFZZ	2540-01-627-4775	4D3B0	C04V000202-A	. LATCH ASSEMBLY WINDOW, VEHICULAR, BOLT, 81 MM LONG, WITH BRASS WING NUT UOC: UWP	4
6	PAFZZ	5305-01-625-2523	0YNJ3	BH57X06008-025M1	. . SCREW CAP, SOCKET HEAD, SET SCREW, METRIC 18-8, STAINLESS STEEL, BUTTON HEAD, M6, 8MM LENGTH UOC: UWP	6
7	PAFZZ	5307-01-626-8290	4D3B0	C04V002201	. STUD PLAIN, PIN ASSEMBLY, HINGE UOC: UWP	1
8	PAFZZ	5310-01-590-7614	39428	94205A280	. . NUT SELF-LOCKING, HEXAGON, NYLON-INSERT, STAINLESS STEEL, M12, 1.75MM PITCH, 19MM WIDTH, 12MM HEIGHT UOC: UWP	2
					END OF FIGURE	

FIELD MAINTENANCE
DATA PLATE

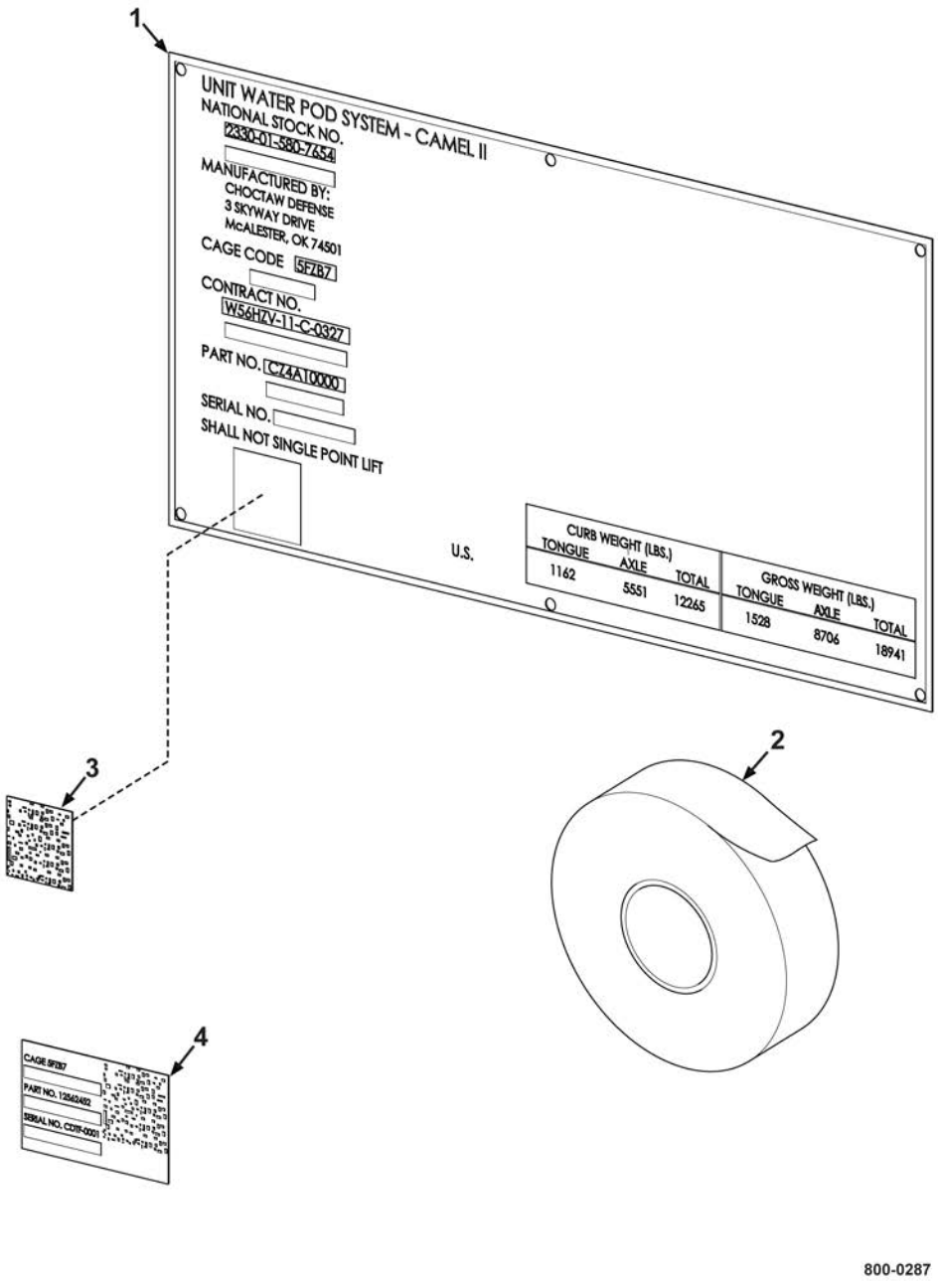


Figure 16. DATA PLATE

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0307 DATA PLATES	
					FIG. 16. DATA PLATE	
1	PFFZZ	7690-01-624-9021	19207	12562525-1	MARKER IDENTIFICATION, PLATE, DATA, LARGE, 6.00 IN X 11.75 IN, 1 OF 3 UOC: UWP	1
2	XDFZZ		76381	5915	TAPE ACRYLIC FOAM, BLACK, 1 IN X 72 YARDS, 3M VHB UOC: UWP	1
3	PFFZZ	7690-01-624-8986	19207	12562525-2	MARKER IDENTIFICATION, PLATE, DATA, 1 IN X 1 IN , UID, 2 OF 3 UOC: UWP	1
4	PFFZZ	7690-01-620-5415	19207	12562525-3	MARKER IDENTIFICATION, DATA PLATE, 1.38 IN X 2.25 IN, IUID, 3 OF 3 UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
CATWALK ASSEMBLY

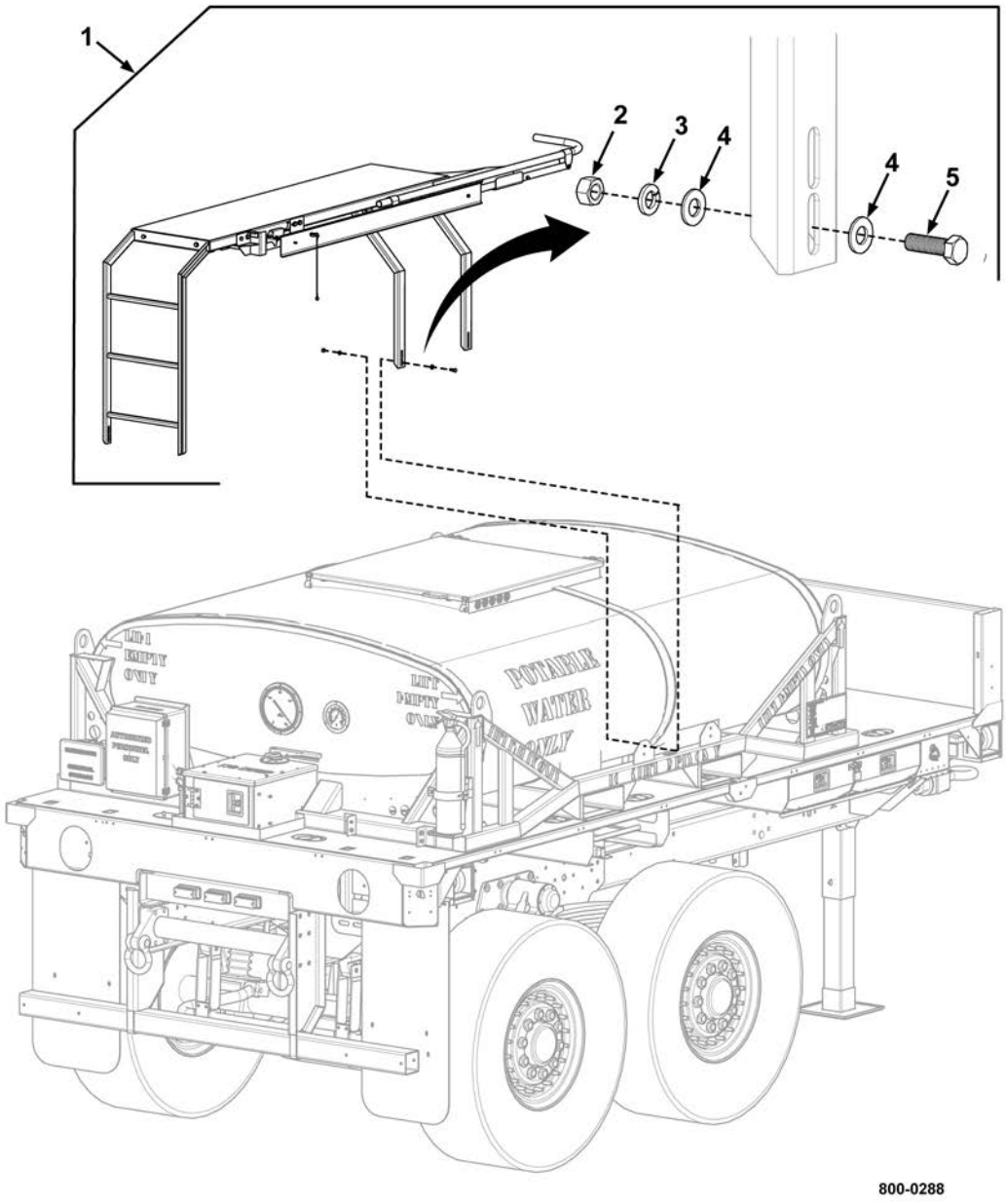


Figure 17. CATWALK ASSEMBLY (Sheet 1 of 9)

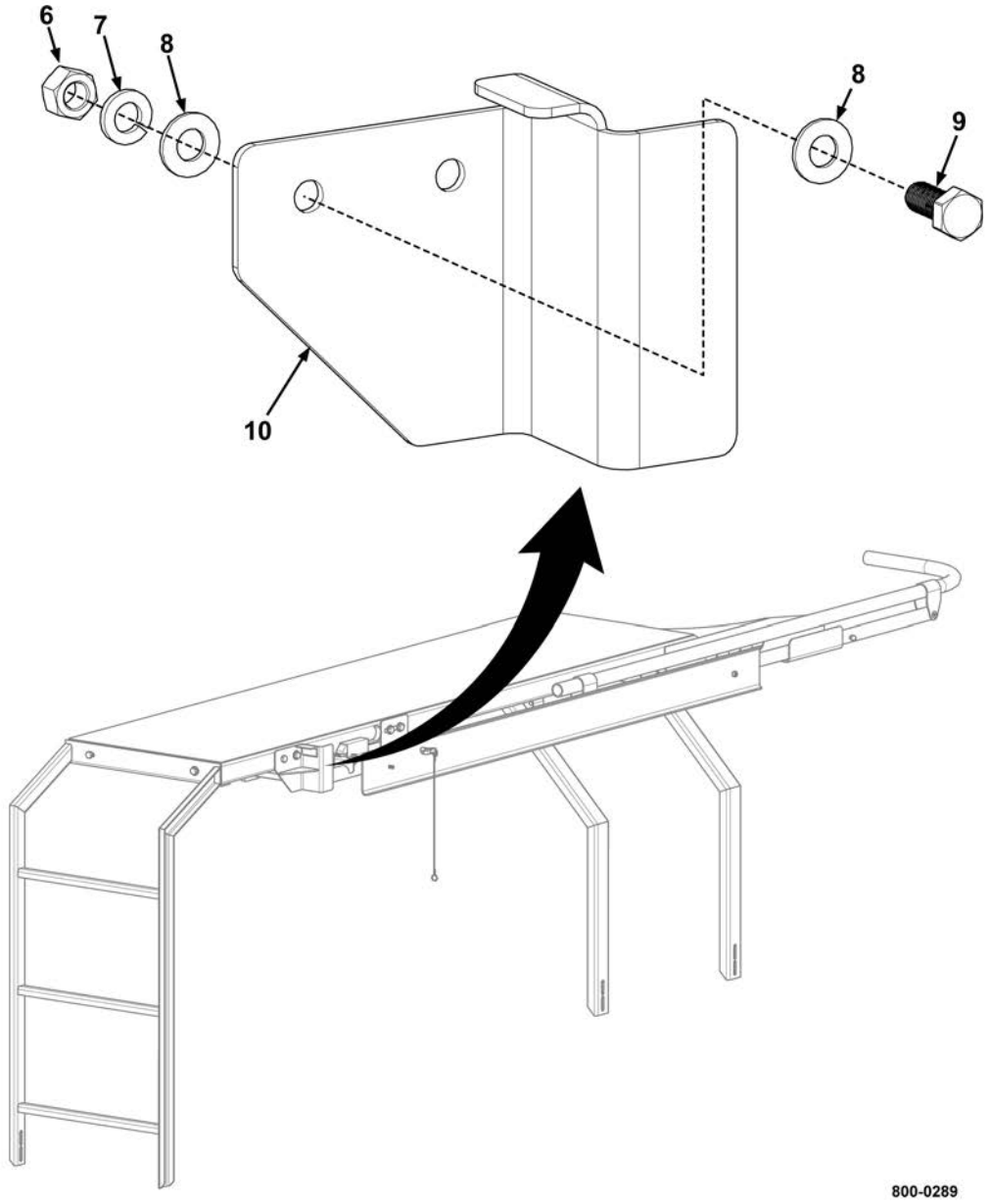


Figure 17. CATWALK ASSEMBLY (Sheet 2 of 9)

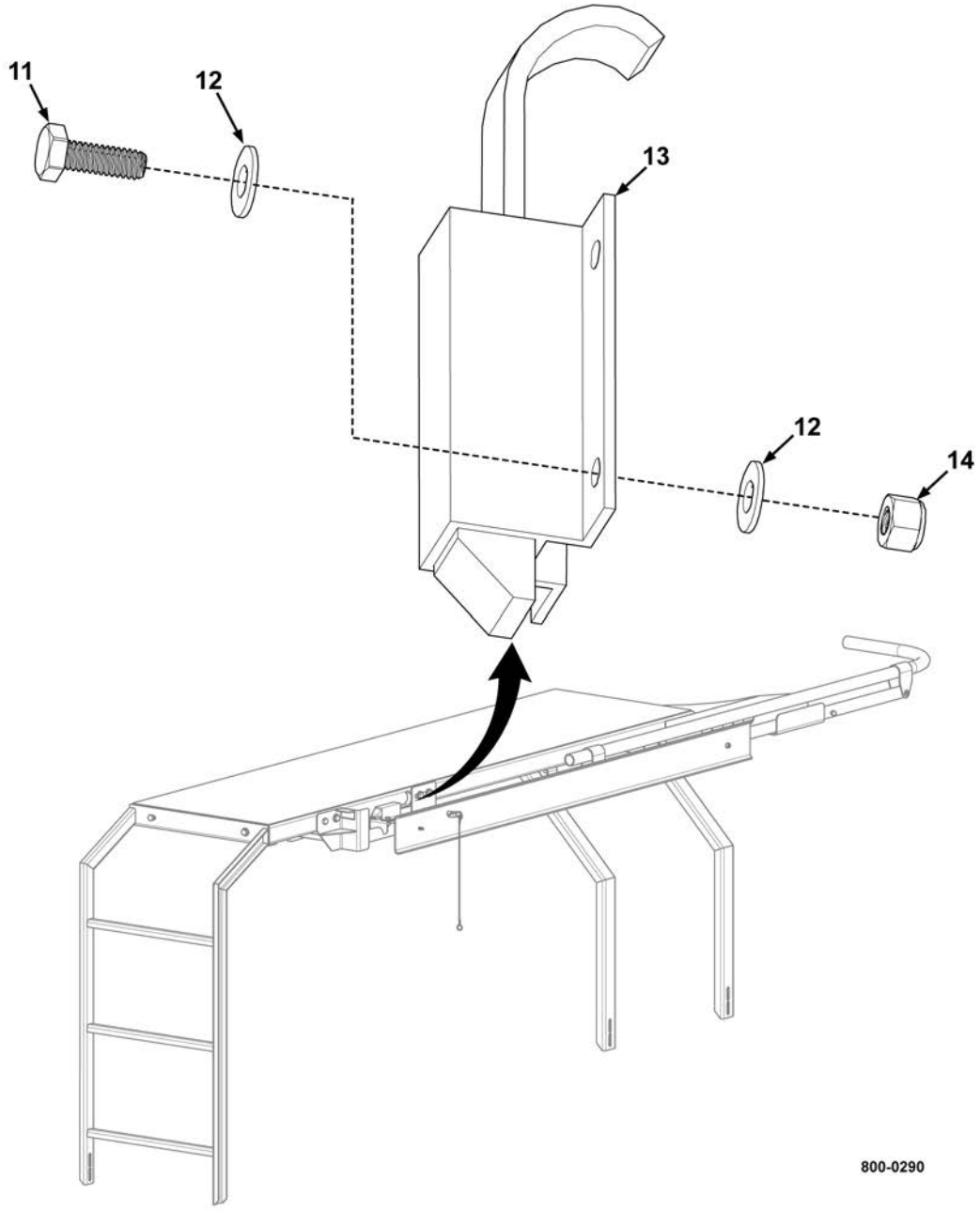


Figure 17. CATWALK ASSEMBLY (Sheet 3 of 9)

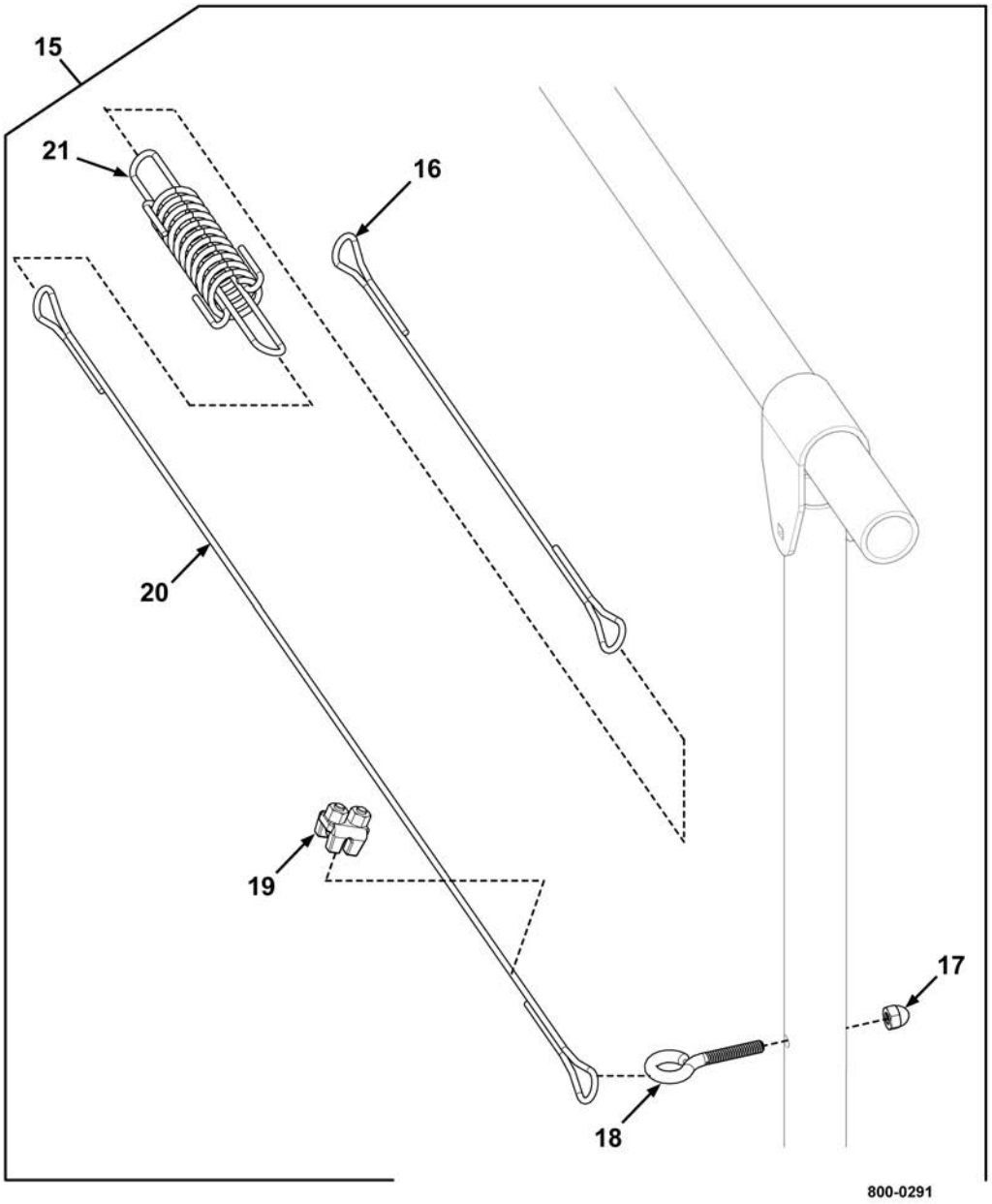


Figure 17. CATWALK ASSEMBLY (Sheet 4 of 9)

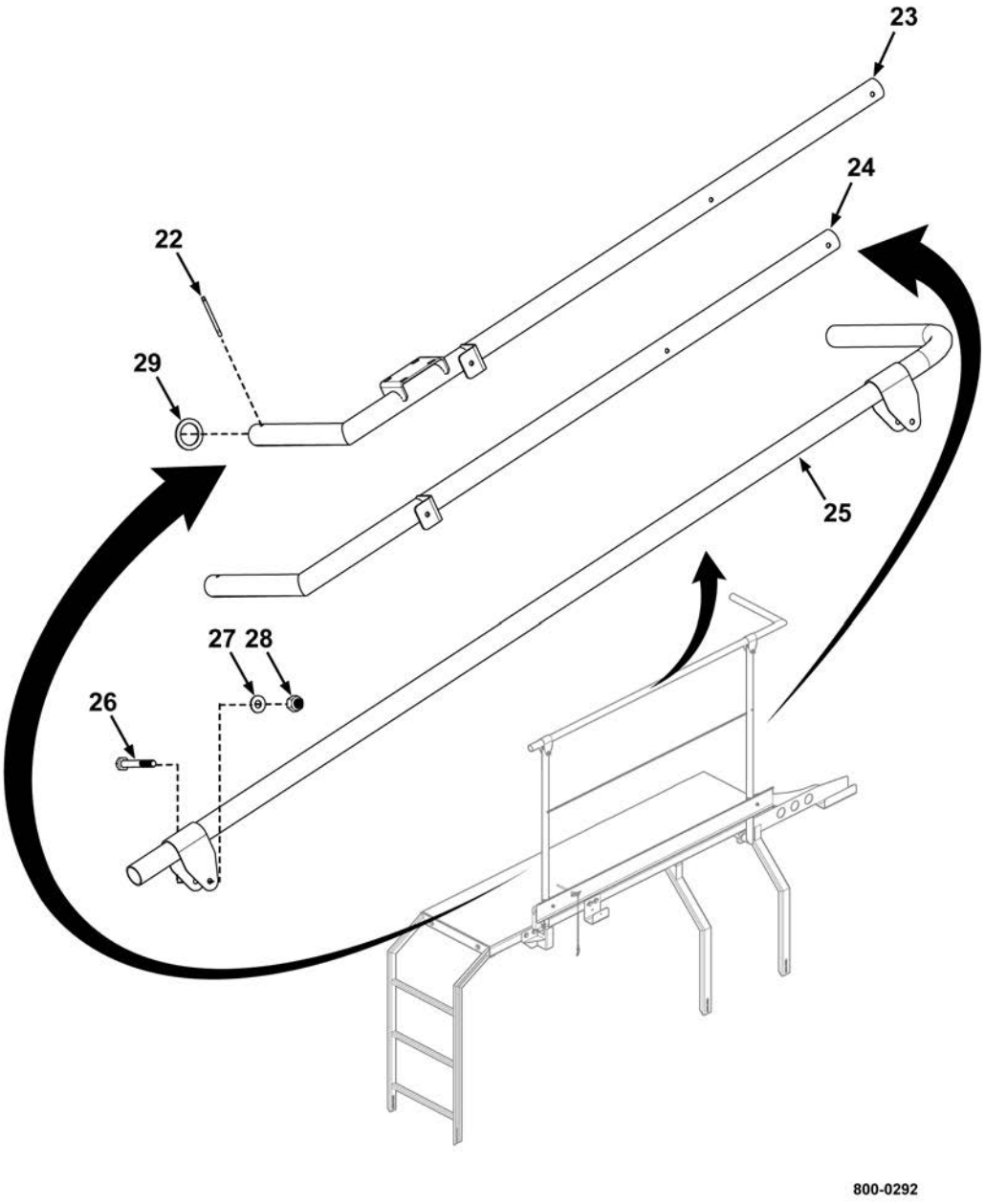


Figure 17. CATWALK ASSEMBLY (Sheet 5 of 9)

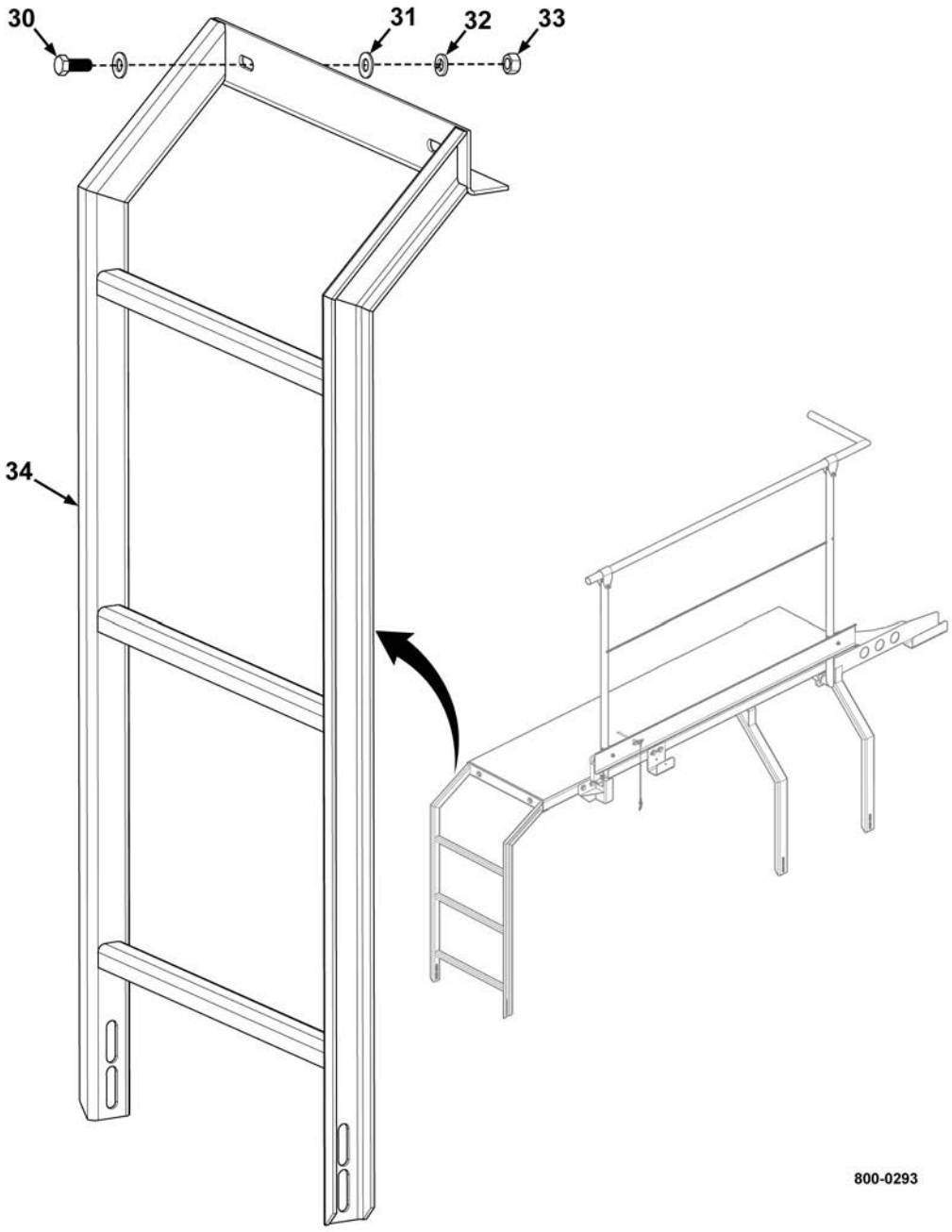


Figure 17. CATWALK ASSEMBLY (Sheet 6 of 9)

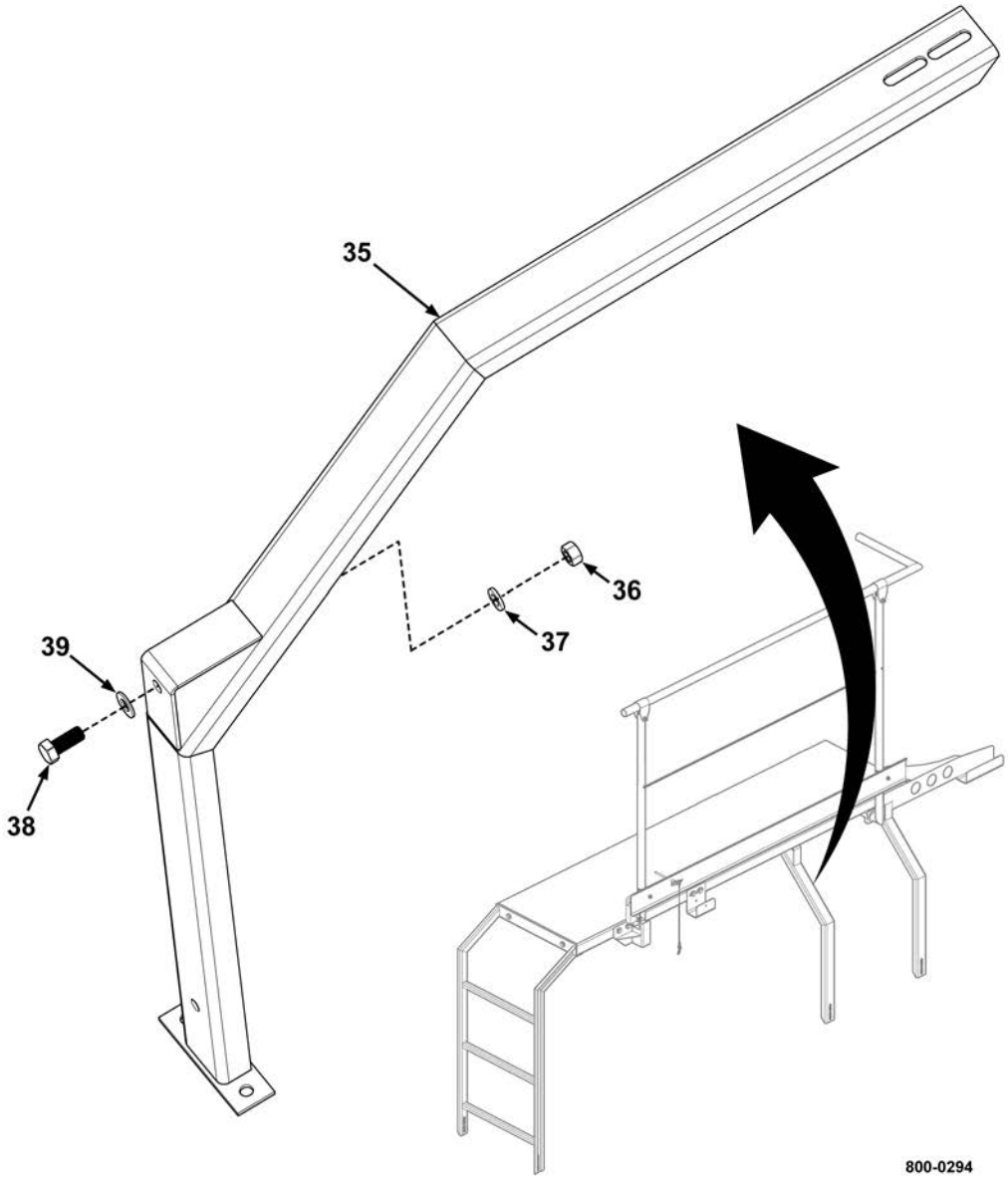


Figure 17. CATWALK ASSEMBLY (Sheet 7 of 9)

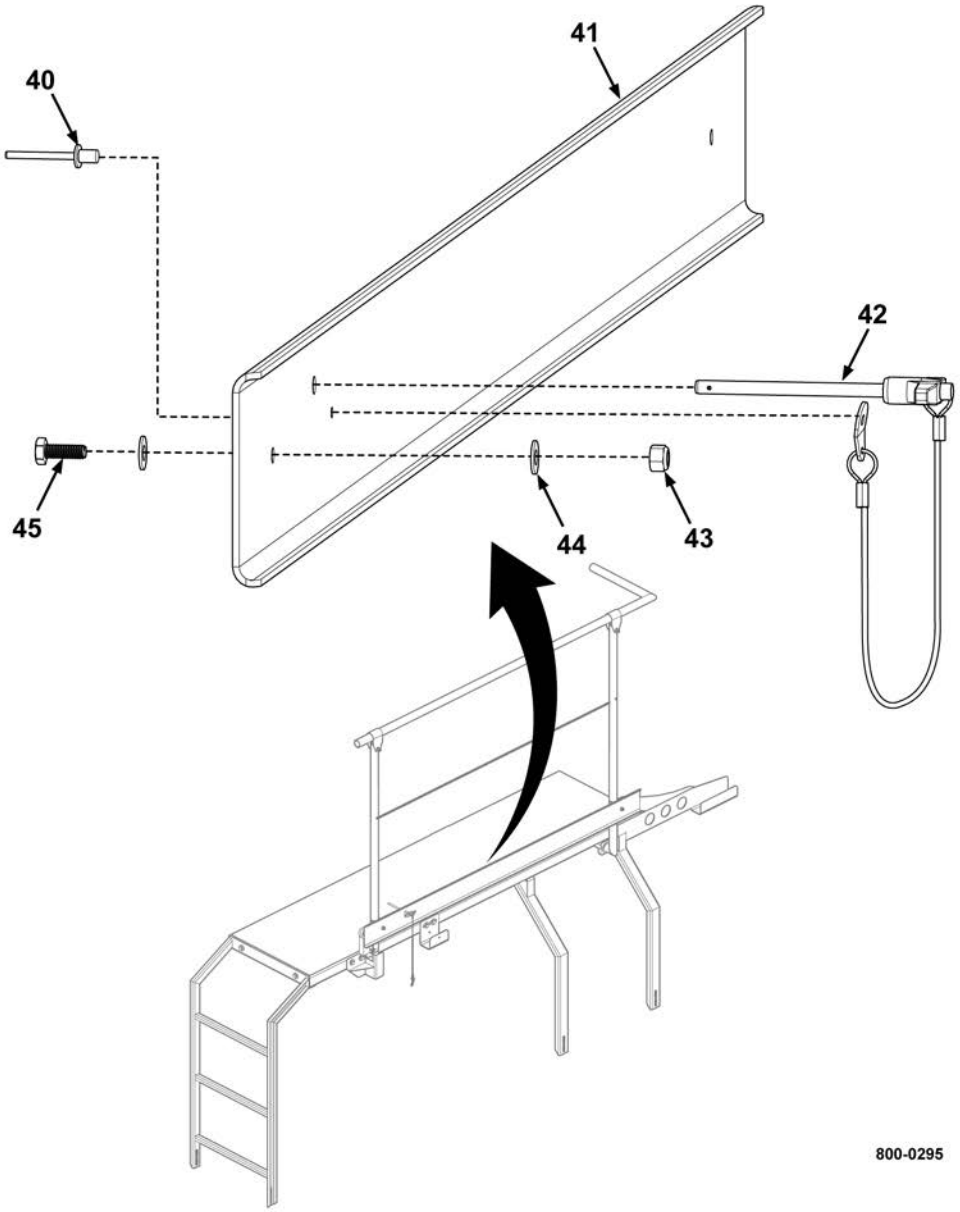


Figure 17. CATWALK ASSEMBLY (Sheet 8 of 9)

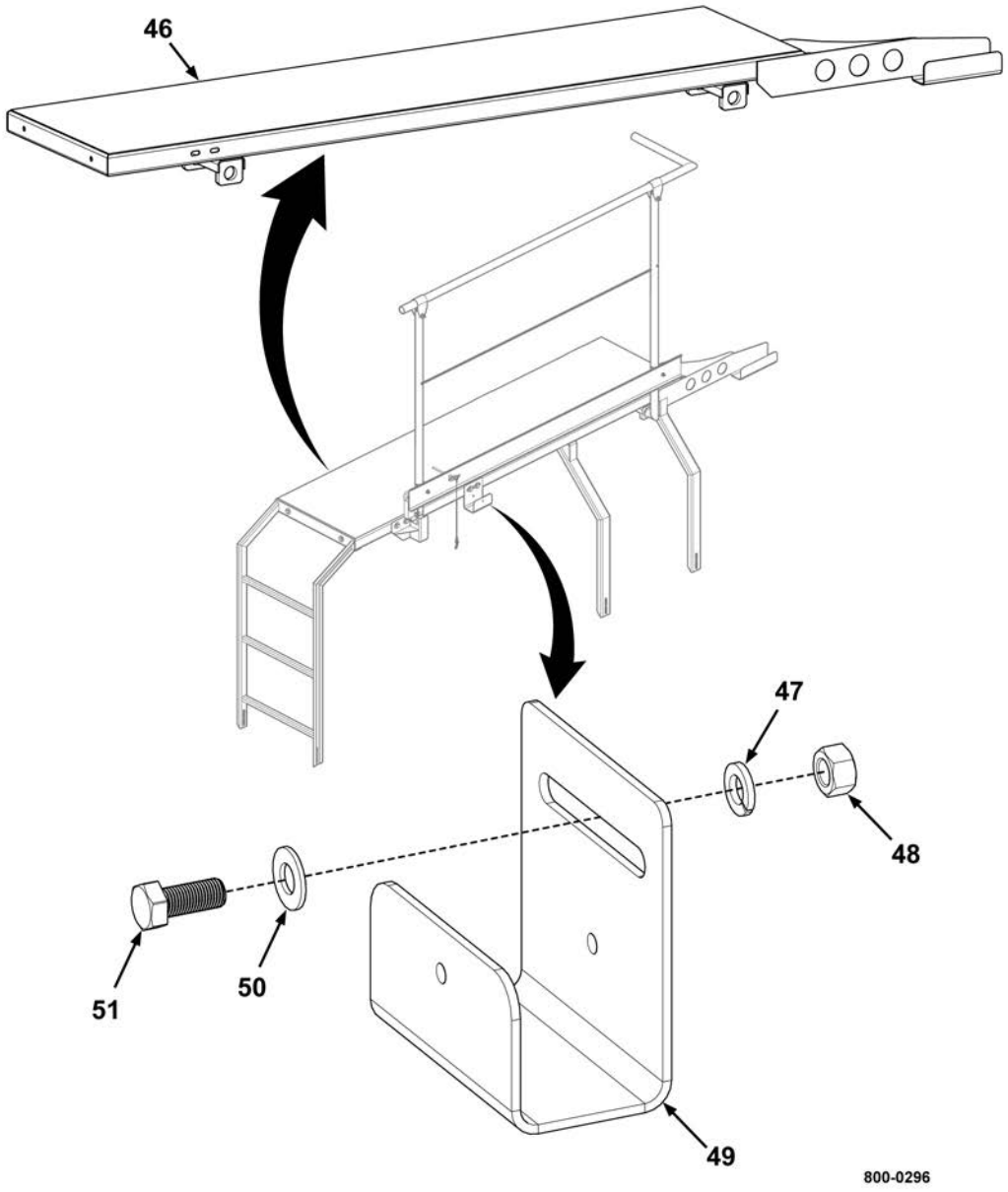


Figure 17. CATWALK ASSEMBLY (Sheet 9 of 9)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0308 CATWALK ASSEMBLY	
					FIG. 17. CATWALK ASSEMBLY	
1	PAFFF	2590-01-624-9022	19207	12562469	CATWALK ASSEMBLY TY CAMEL II UOC: UWP	1
2	PAFZZ	5310-01-608-4838	39428	94895A815	. NUT PLAIN, HEXAGON UOC: UWP	12
3	PAFZZ	5310-01-526-0459	2V507	91104A031	. WASHER LOCK UOC: UWP	24
4	PAFZZ	5310-01-557-0742	0Y3H3	33859	. WASHER FLAT UOC: UWP	12
5	PAFZZ	5305-01-593-8150	39428	92620A655	. SCREW CAP, HEXAGON HEAD UOC: UWP	12
6	PAFZZ	5310-01-505-7694	0Y3H3	1136456	. NUT PLAIN, HEXAGON UOC: UWP	2
7	PAFZZ	5310-01-526-0459	2V507	91104A031	. WASHER LOCK UOC: UWP	2
8	PAFZZ	5310-01-553-0796	0Y3H3	1133859	. WASHER FLAT UOC: UWP	4
9	PAFZZ	5305-01-593-8150	39428	92620A655	. SCREW CAP, HEXAGON HEAD UOC: UWP	2
10	PFFZZ	5340-01-609-5924	19207	12562483	. PLATE MOUNTING, HANDRAIL LOCKING LATCH BRACKET UOC: UWP	1
11	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD UOC: UWP	4
12	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	8
13	PAFZZ	5340-01-608-6043	39428	1178A31	. BOLT BARREL, HANDRAIL LOCKING LATCH UOC: UWP	1
14	PAFZZ	5310-01-516-9784	39428	97135A210	. NUT SELF-LOCKING, HEXAGON UOC: UWP	4
15	PAFFF	2590-01-620-7044	4D3B0	12562538	. CABLE ASSEMBLY CONTROL, SAFETY, INTERMEDIATE, CATWALK UOC: UWP	1
16	PAFZZ	4010-01-560-2872	3A054	3461T84	. . ROPE WIRE, 1 X 19 STRAND, .125 DIA X 36 IN LG UOC: UWP	2
17	PAFZZ	5310-01-493-3522	39428	90507A230	. . NUT SELF-LOCKING, CAP UOC: UWP	2
18	PAFZZ		39428	9489T57	. . BOLT EYE UOC: UWP	2
19	PAFZZ	5340-01-577-5655	2V507	31985T71	. . RETAINER WIRE ROPE TERMINAL, U-CLAMP UOC: UWP	8

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	PAFZZ	4010-01-560-2872	3A054	3461T84	. . ROPE WIRE, 1 X 19 STRAND, . 125 DIA X 48 IN LG UOC: UWP	2
21	PAFZZ	5360-01-619-8914	39428	9630K64	. . SPRING HELICAL, EXTENSION, SAFETY, 6.00LG X 1.1OD X .125 DIA UOC: UWP	1
22	PAFZZ	5315-01-608-4662	0Y3H3	65082	. PIN COTTER UOC: UWP	2
23	PFFZZ	2590-01-609-6890	19207	12562474	. HANDRAIL VEHICULAR, HANDRAIL LEG AFT UOC: UWP	1
24	PFFZZ	2590-01-609-3663	19207	12562475	. BRACKET VEHICULAR COMPONENTS, HANDRAIL LEG FORWARD UOC: UWP	1
25	PFFZZ	2590-01-609-6888	19207	12562473	. HANDRAIL VEHICULAR, TOP UOC: UWP	1
26	PAFZZ	5306-01-620-9532	39428	90185A550	. BOLT SQUARE NECK, CARRIAGE, .25-20 X 2.00L UOC: UWP	2
27	PAFZZ	5310-01-204-2167	39428	90126A029	. WASHER FLAT UOC: UWP	2
28	PAFZZ	5310-01-516-9784	39428	97135A210	. NUT SELF-LOCKING, HEXAGON UOC: UWP	2
29	PAFZZ	2510-01-608-5778	19207	12562474-03	. FRAME SECTION STRUCTURAL, VEHICULAR, HANDRAIL LEG WASHER UOC: UWP	2
30	PAFZZ	5305-01-593-8150	39428	92620A655	. SCREW CAP, HEXAGON HEAD UOC: UWP	2
31	PAFZZ	5310-01-553-0796	0Y3H3	1133859	. WASHER FLAT UOC: UWP	2
32	PAFZZ	5310-01-526-0459	2V507	91104A031	. WASHER LOCK UOC: UWP	2
33	PAFZZ	5310-01-505-7694	0Y3H3	1136456	. NUT PLAIN, HEXAGON UOC: UWP	2
34	PFFZZ	2540-01-609-6884	19207	12562467	. LADDER VEHICLE BOARDING, CATWALK UOC: UWP	1
35	PFFZZ	2590-01-609-7217	19207	12562466	. BRACKET VEHICULAR COMPONENTS, CATWALK SUPPORT LEG UOC: UWP	2
36	PAFZZ	5310-01-505-7694	0Y3H3	1136456	. NUT PLAIN, HEXAGON UOC: UWP	4
37	PAFZZ	5310-01-526-0459	2V507	91104A031	. WASHER LOCK UOC: UWP	4
38	PAFZZ	5305-01-593-8150	39428	92620A655	. SCREW CAP, HEXAGON HEAD UOC: UWP	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
39	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	4
40	PAFZZ	5320-01-533-2458	05NF7	97524A032	. RIVET BLIND, ZINC PLATED STEEL, DOMED, 1/8 IN DIA, 0.25 IN GRIP UOC: UWP	1
41	PFFZZ	5340-01-608-4435	19207	12562476	. PLATE MOUNTING, CATWALK KICKPLATE UOC: UWP	1
42	PAFZZ	5315-01-624-7674	39428	93750A330	. PIN QUICK RELEASE, WI/ 12 IN LANYARD, .25 DIA X 3.5LG UOC: UWP	1
43	PAFZZ	5310-01-516-9784	39428	97135A210	. NUT SELF-LOCKING, HEXAGON UOC: UWP	2
44	PAFZZ	5310-01-204-2167	39428	90126A029	. WASHER FLAT UOC: UWP	4
45	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD UOC: UWP	2
46	PFFZZ	2590-01-609-7144	19207	12562471	. SCREEN PLATFORM-RACK, CATWALK PLATFORM UOC: UWP	1
47	PAFZZ	5310-01-526-0459	2V507	91104A031	. WASHER LOCK UOC: UWP	2
48	PAFZZ	5310-01-505-7694	0Y3H3	1136456	. NUT PLAIN, HEXAGON UOC: UWP	2
49	PFFZZ	5340-01-620-6337	19207	12562491	. BRACKET MOUNTING, STOWAGE, HAND RAIL UOC: UWP	1
50	PAFZZ	5310-01-553-0796	0Y3H3	1133859	. WASHER FLAT UOC: UWP	2
51	PAFZZ	5305-01-593-8150	39428	92620A655	. SCREW CAP, HEXAGON HEAD UOC: UWP	2

END OF FIGURE

FIELD MAINTENANCE
ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT

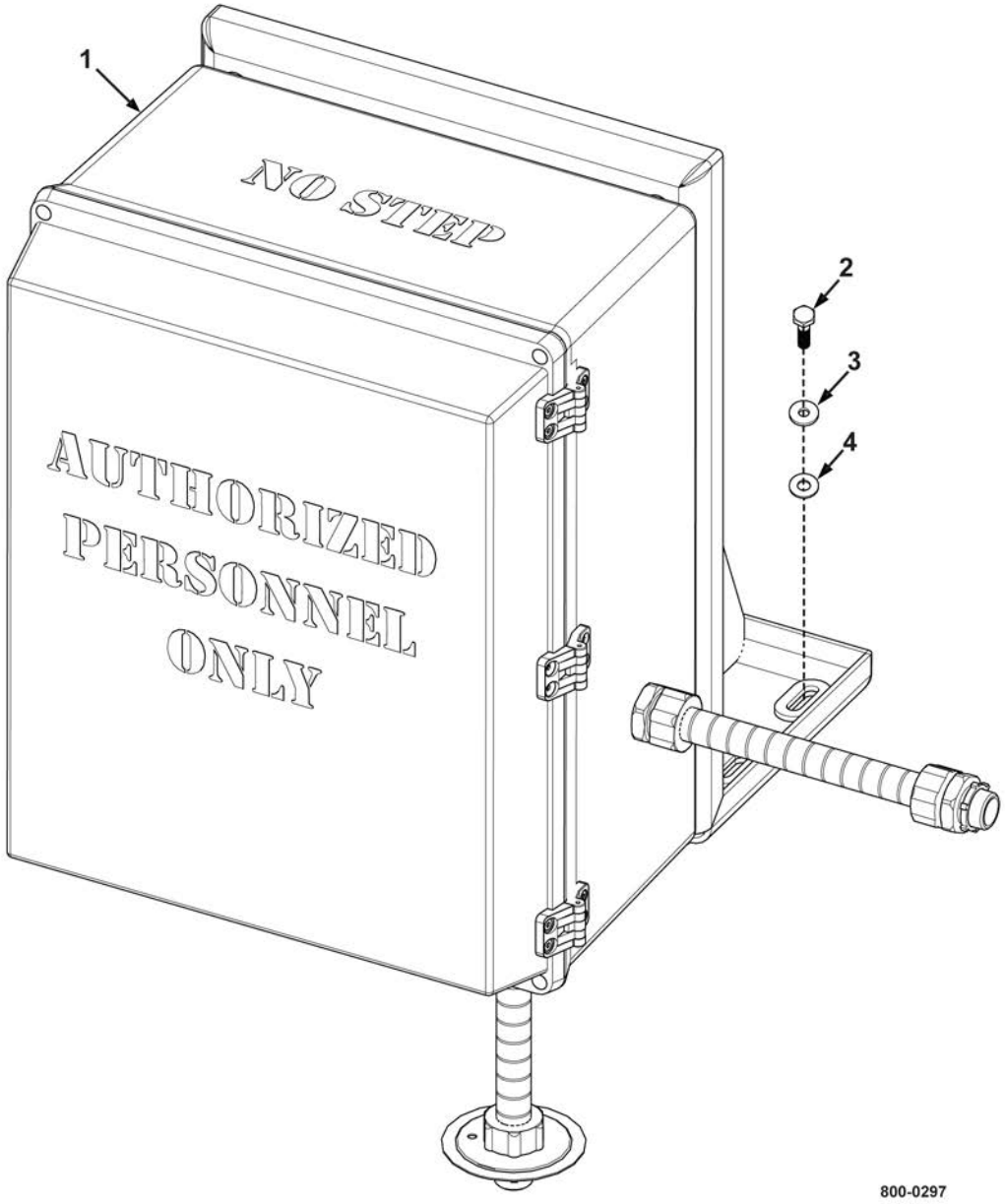


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 1 of 24)

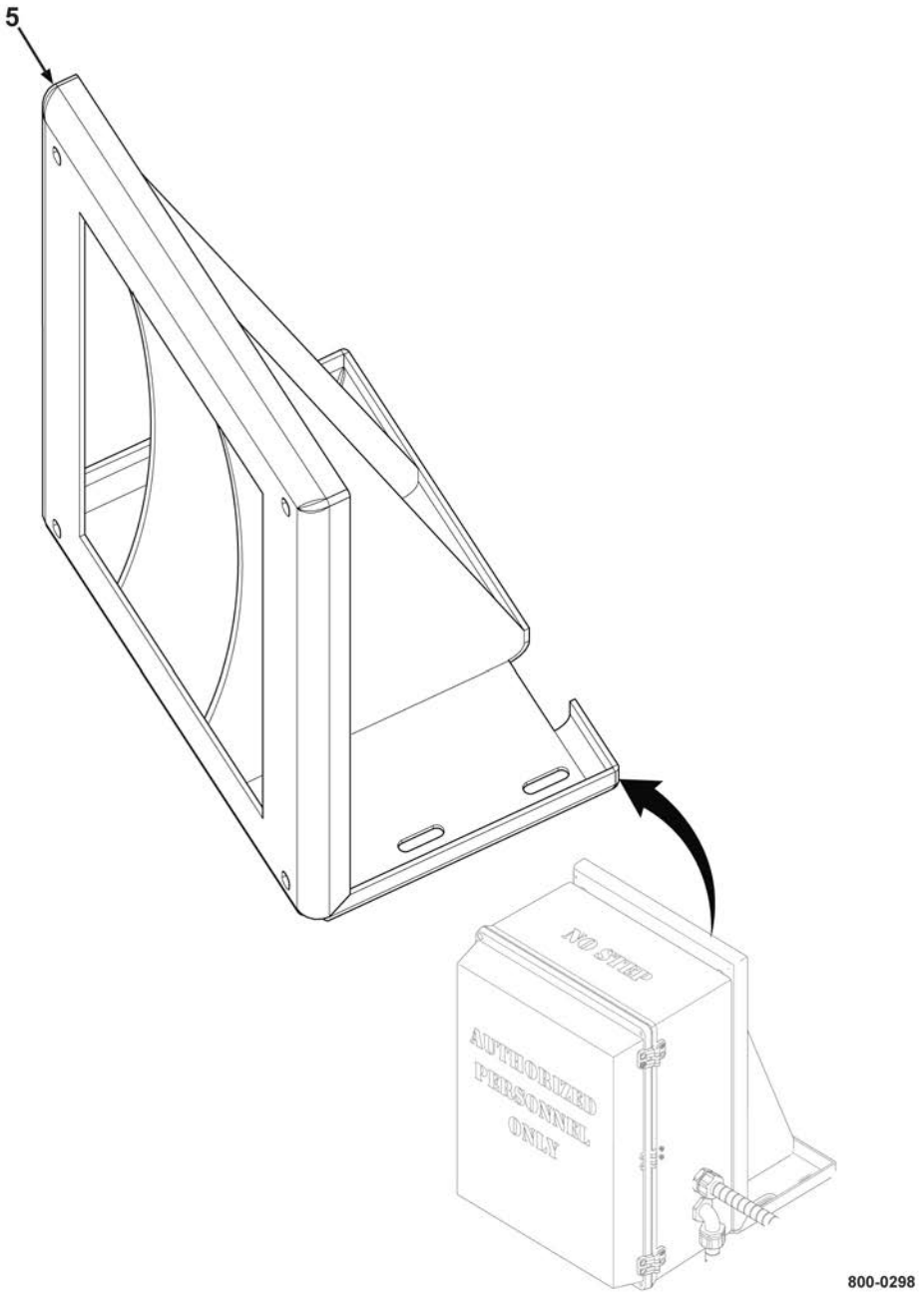


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 2 of 24)

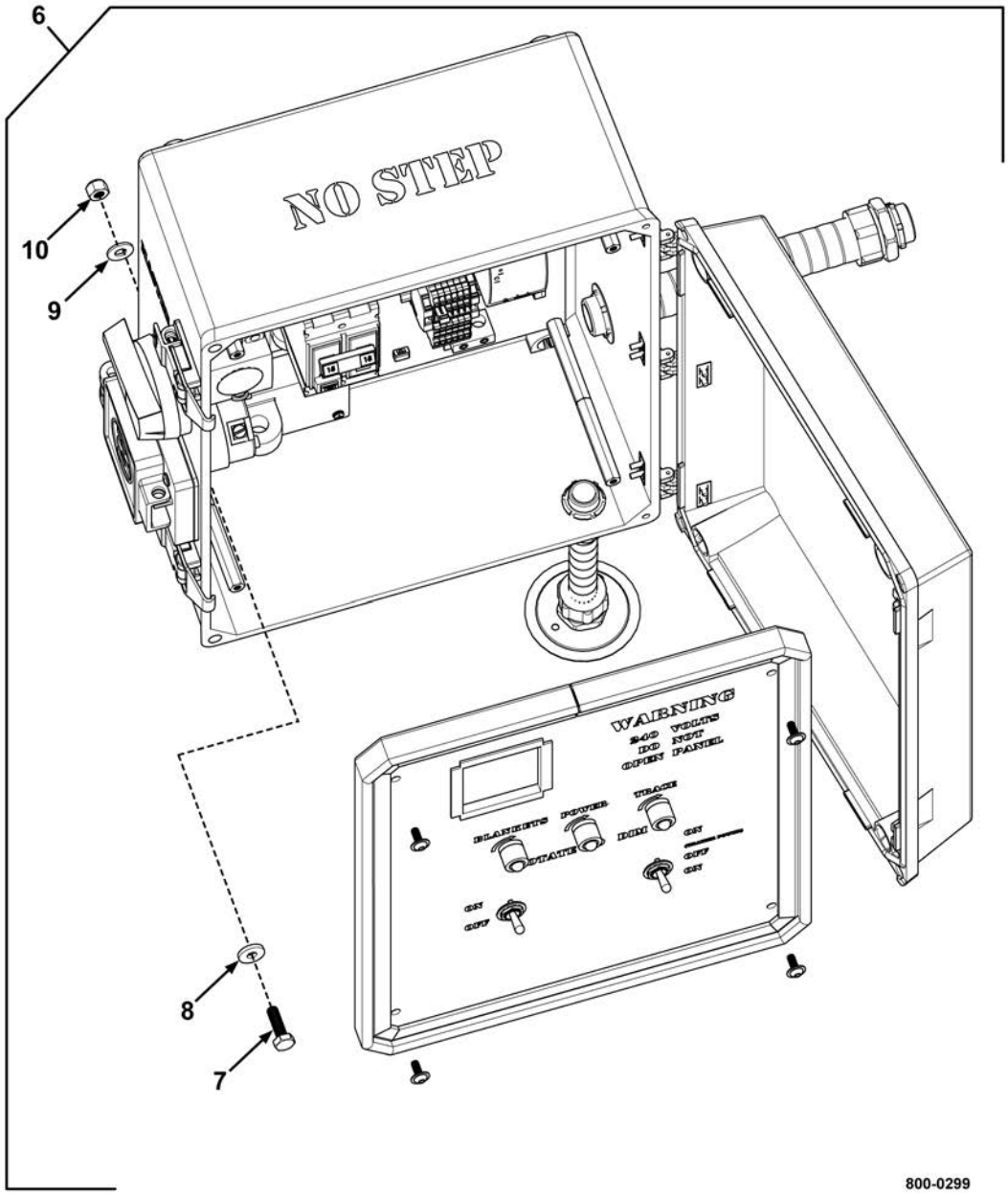


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 3 of 24)

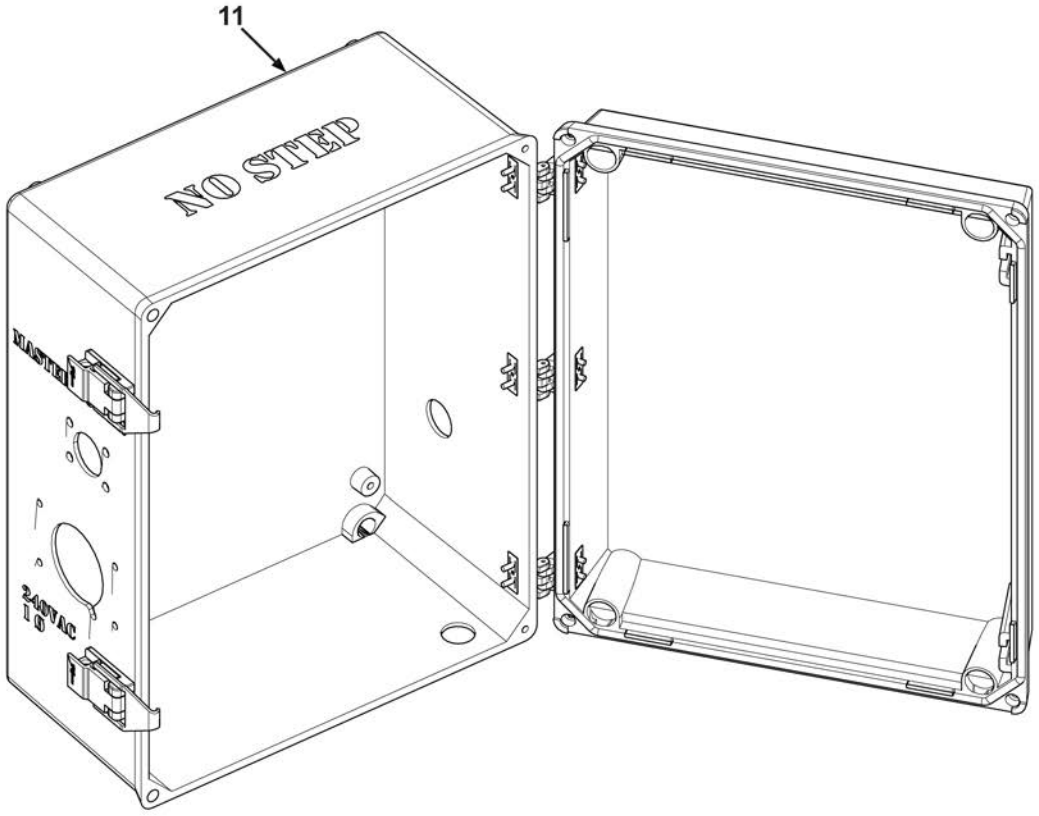


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 4 of 24)

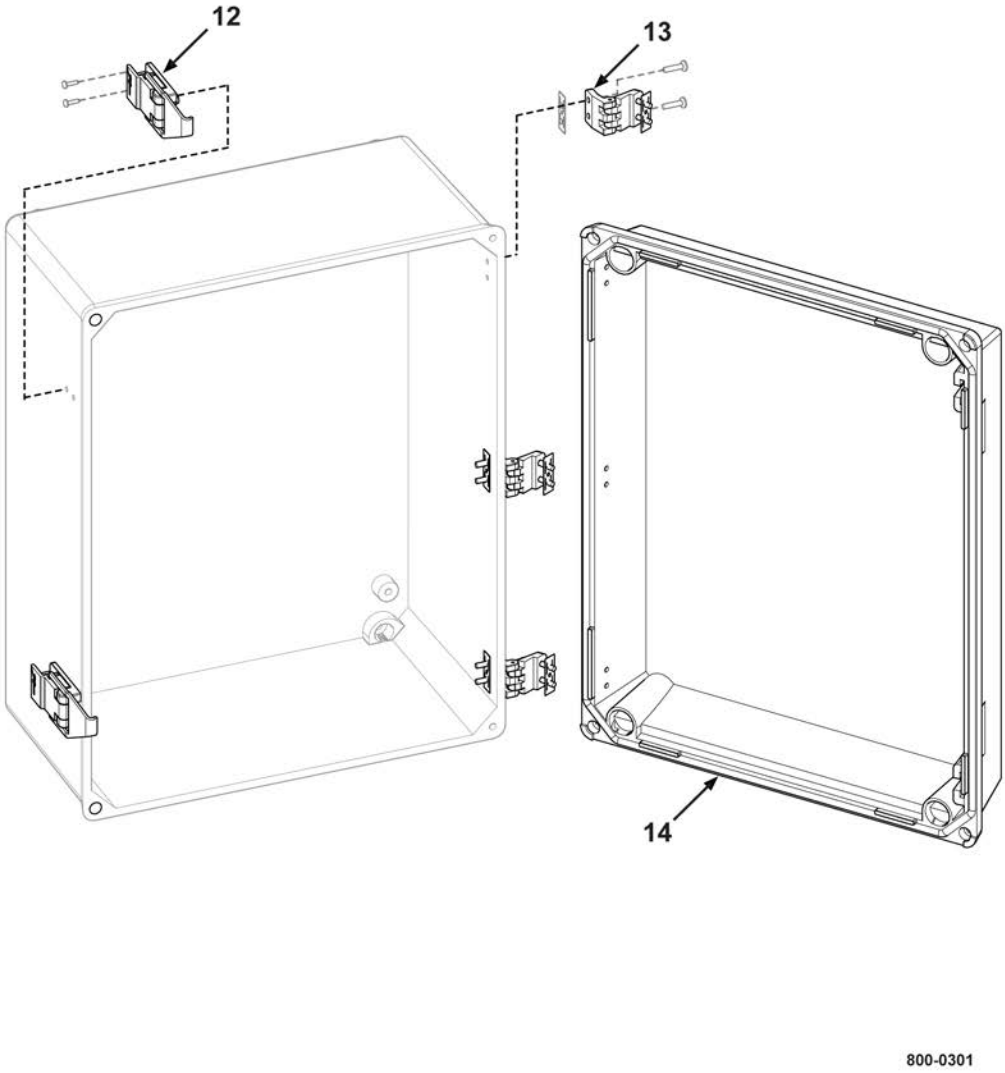


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 5 of 24)

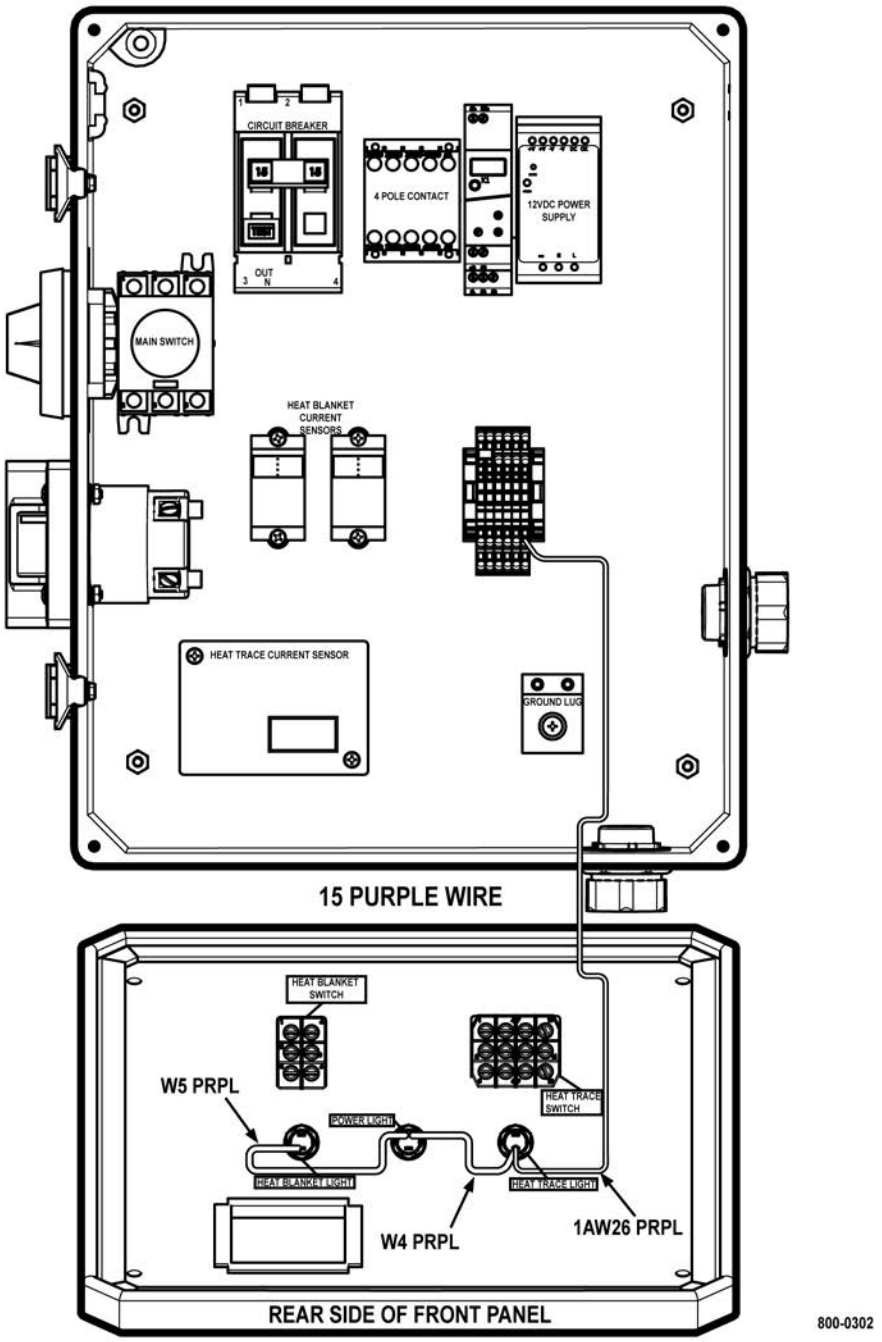


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 6 of 24)

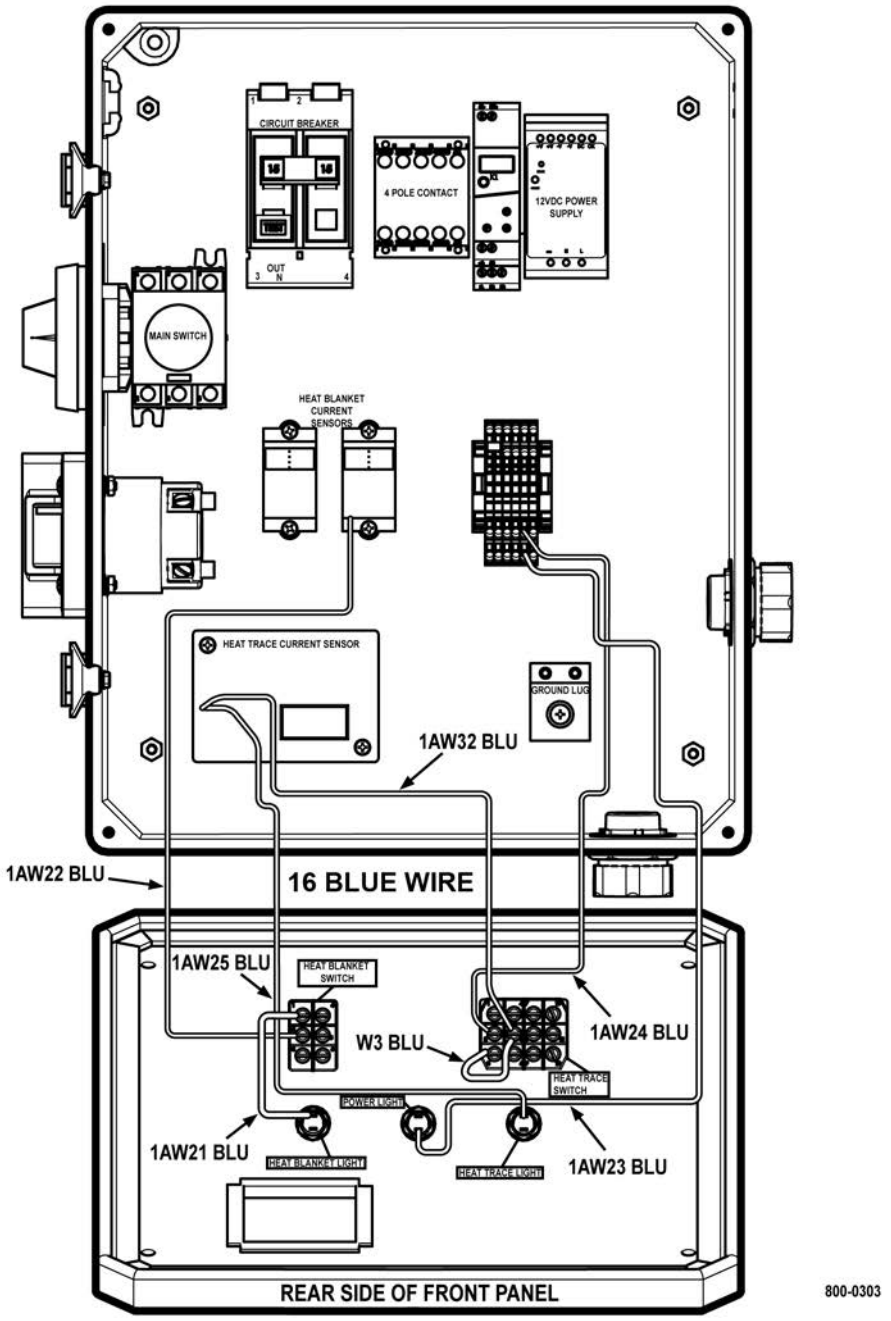


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 7 of 24)

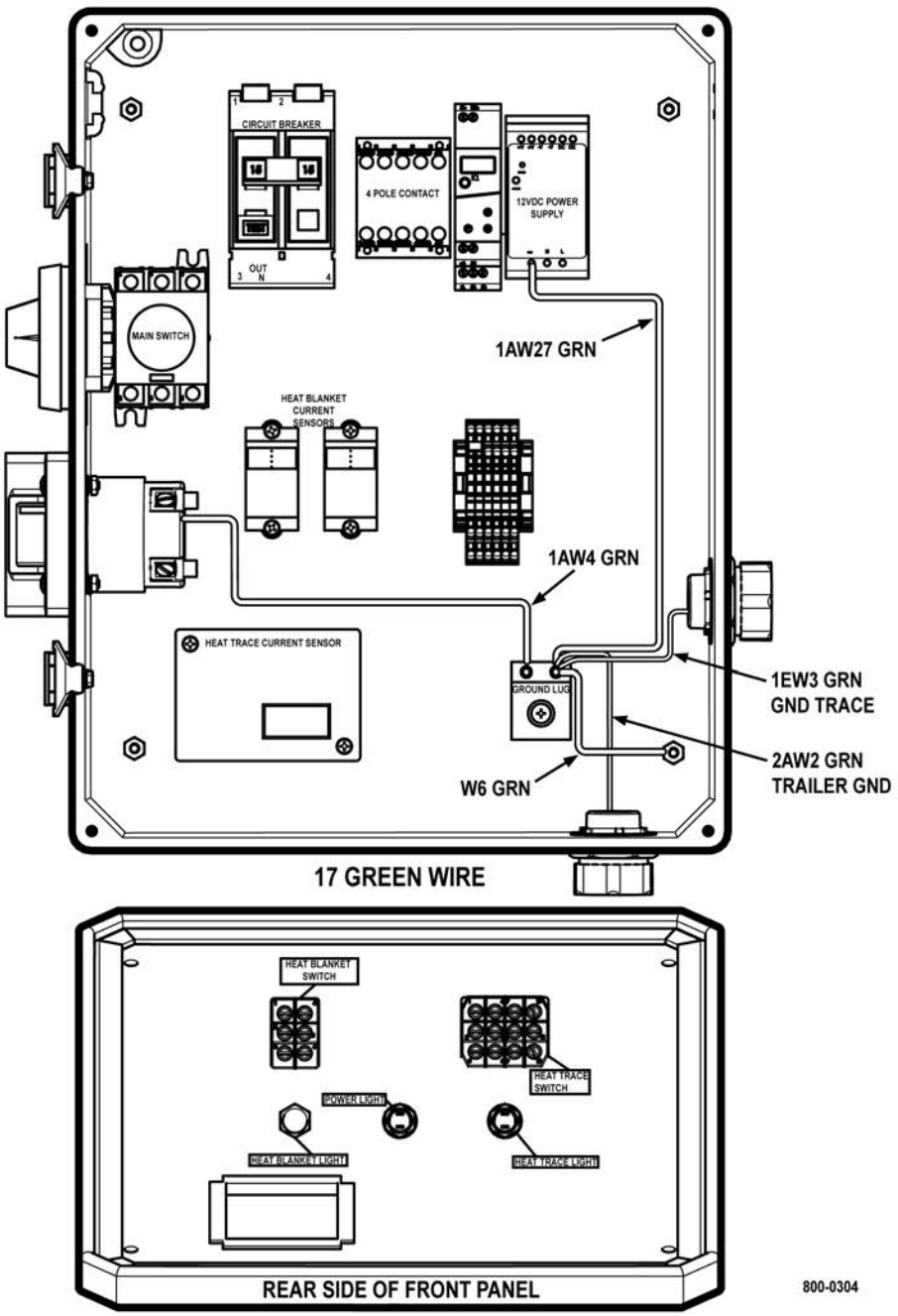


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 8 of 24)

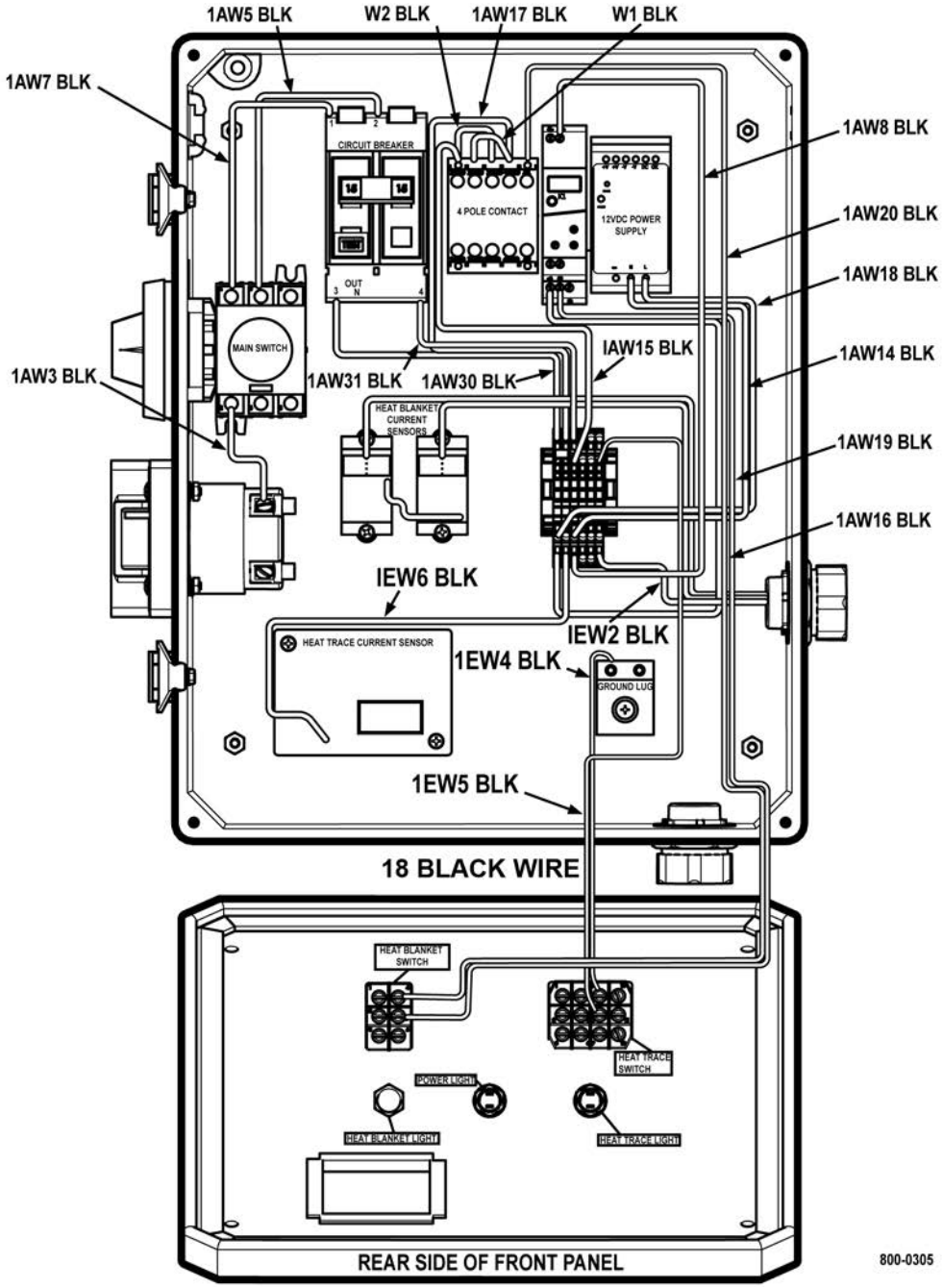


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 9 of 24)

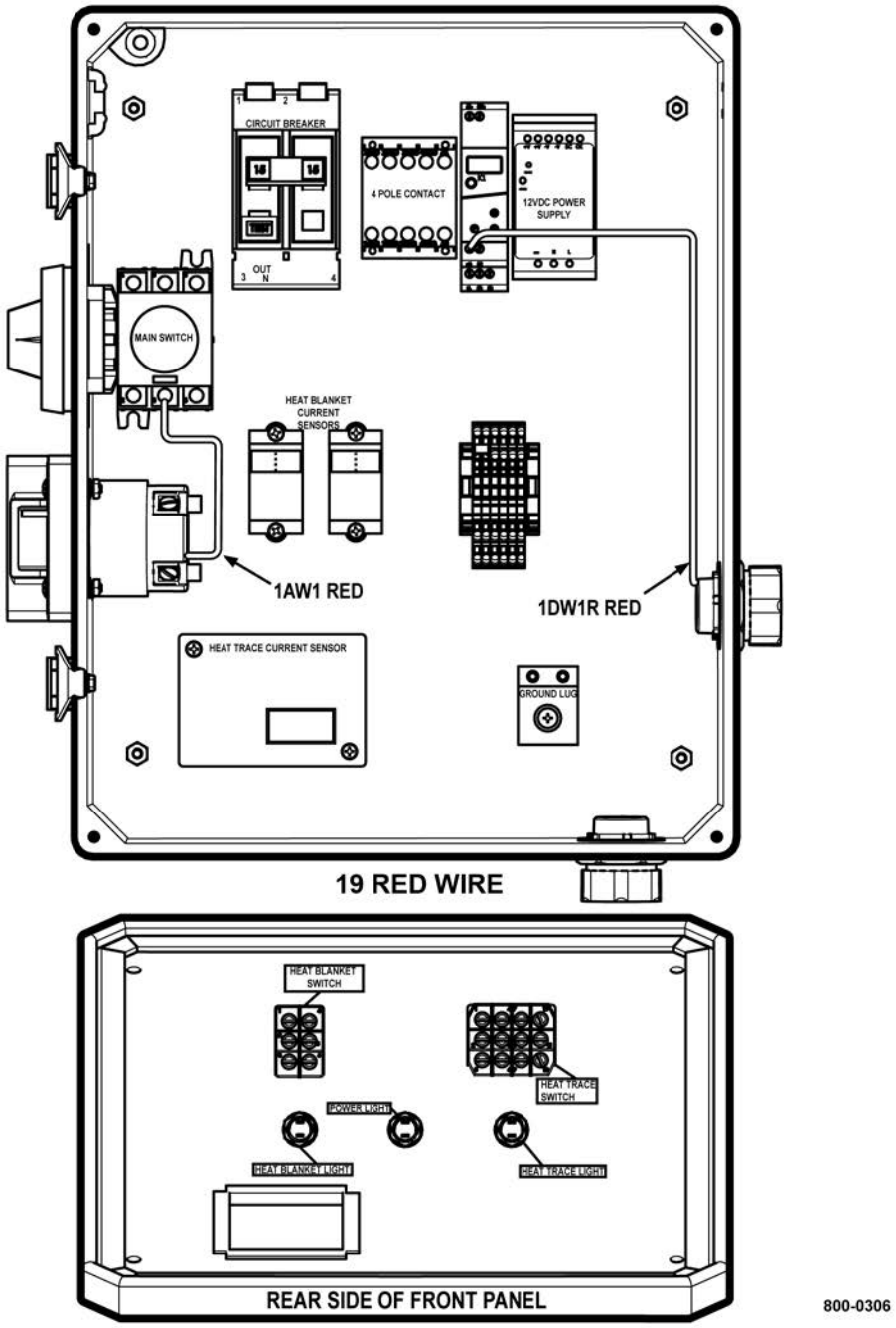


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 10 of 24)

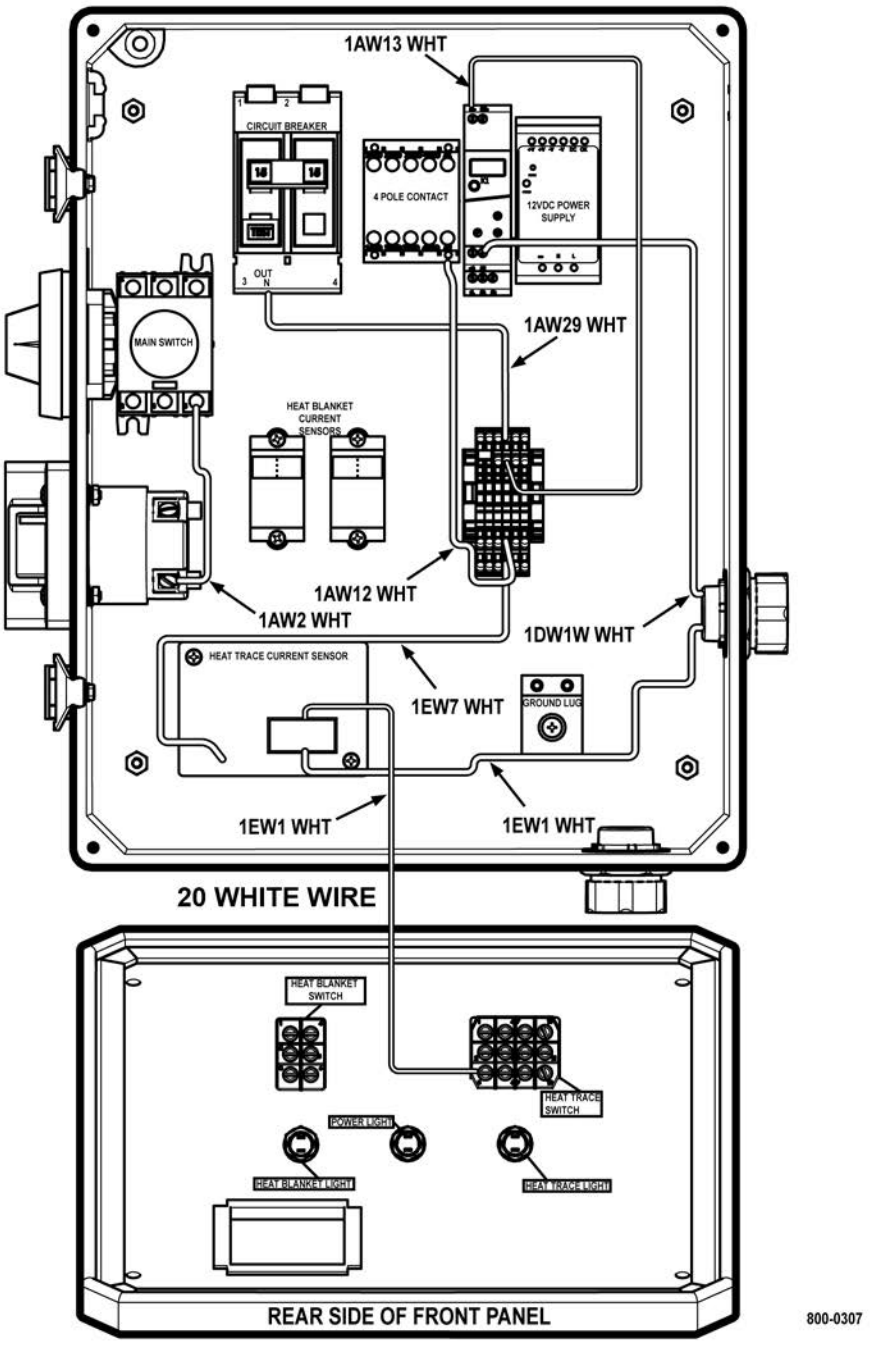


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 11 of 24)

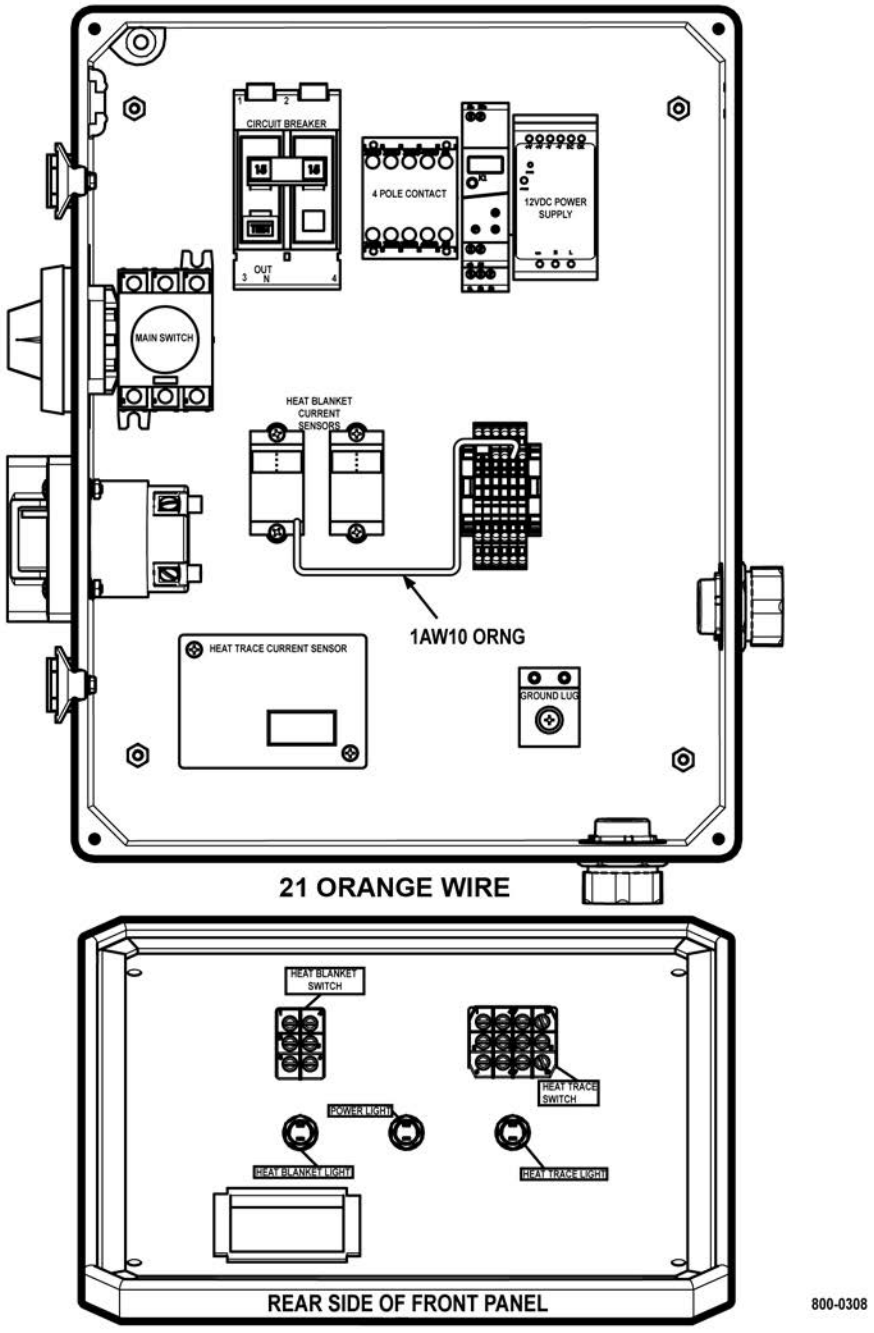


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 12 of 24)

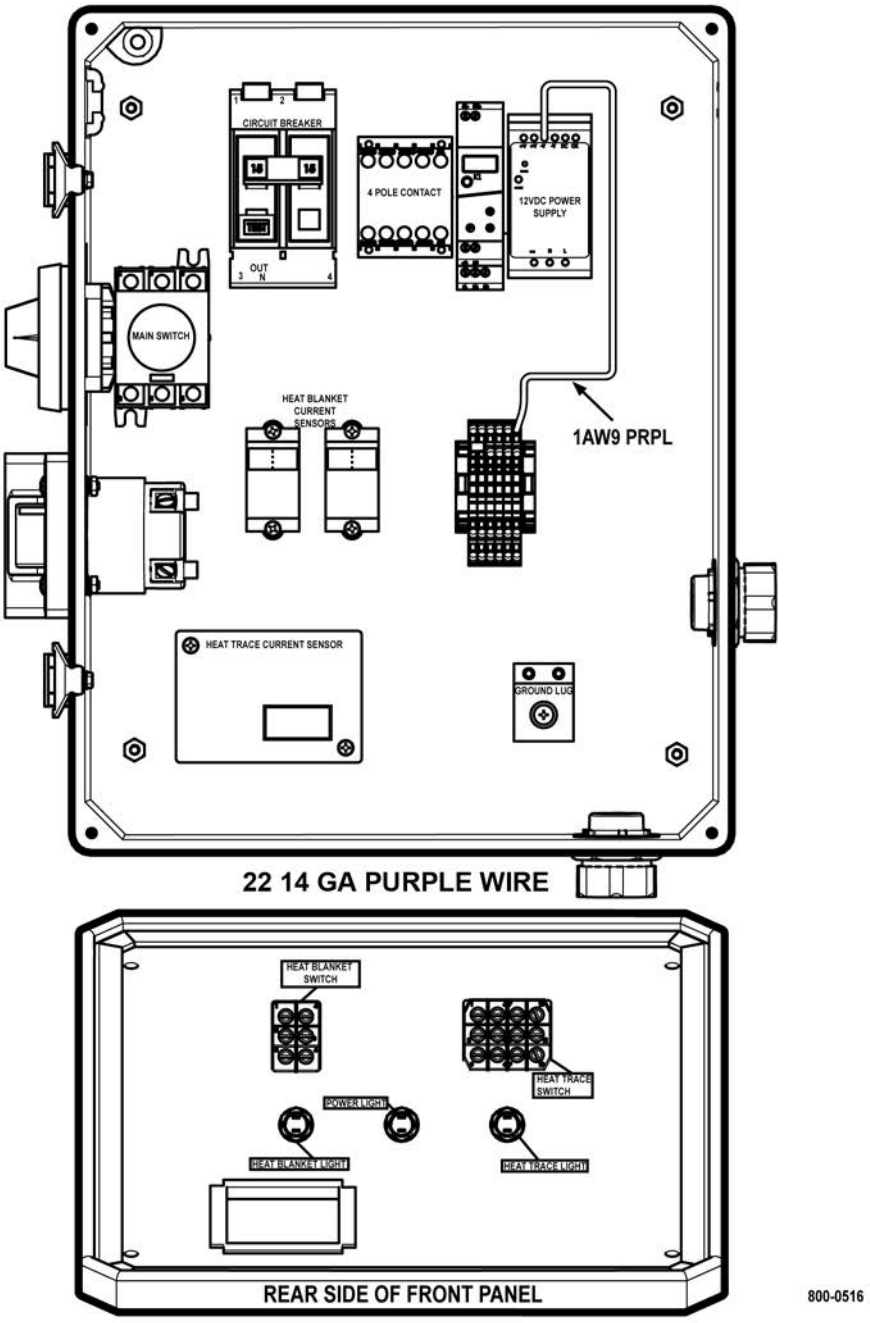


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 13 of 24)

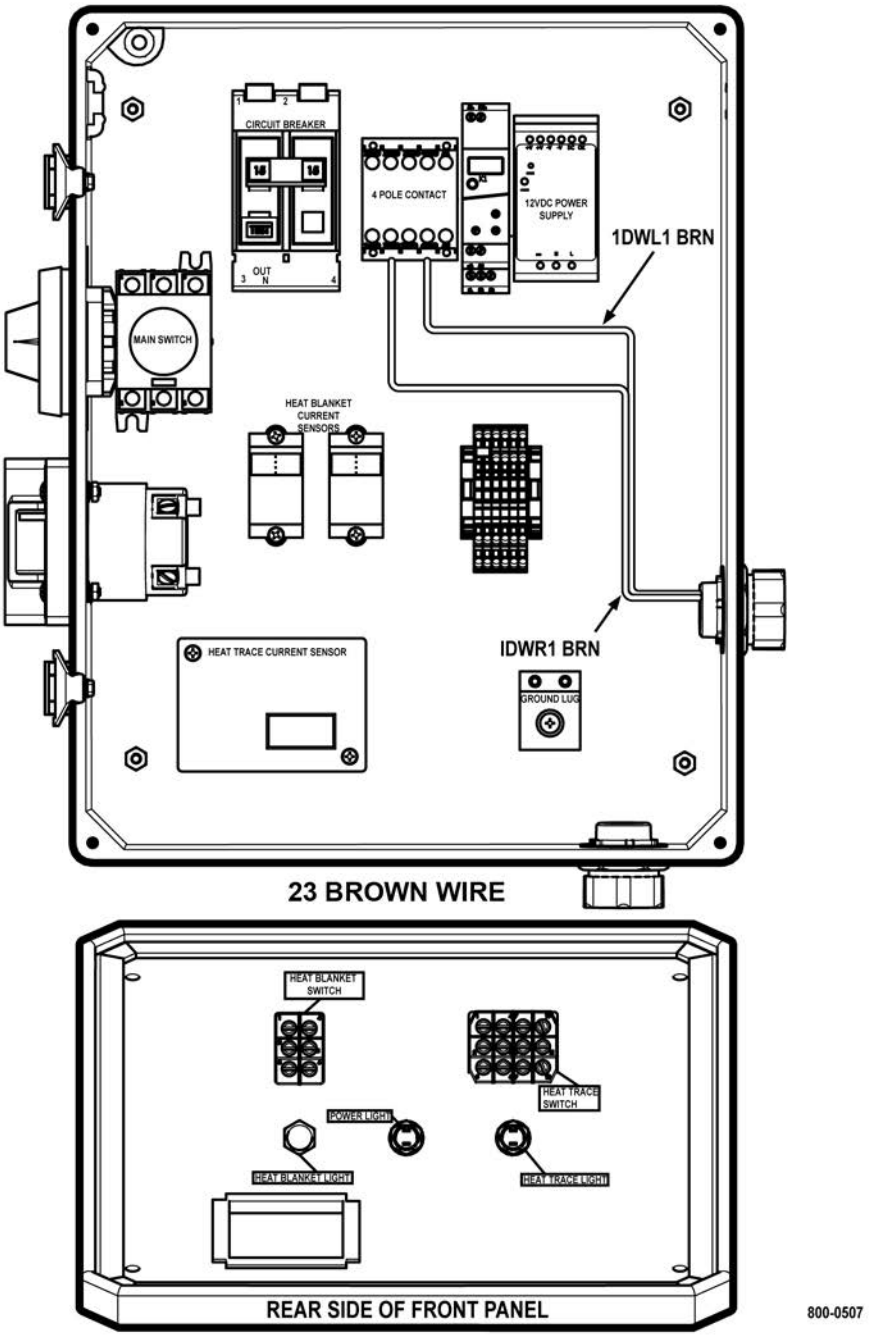


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 14 of 24)

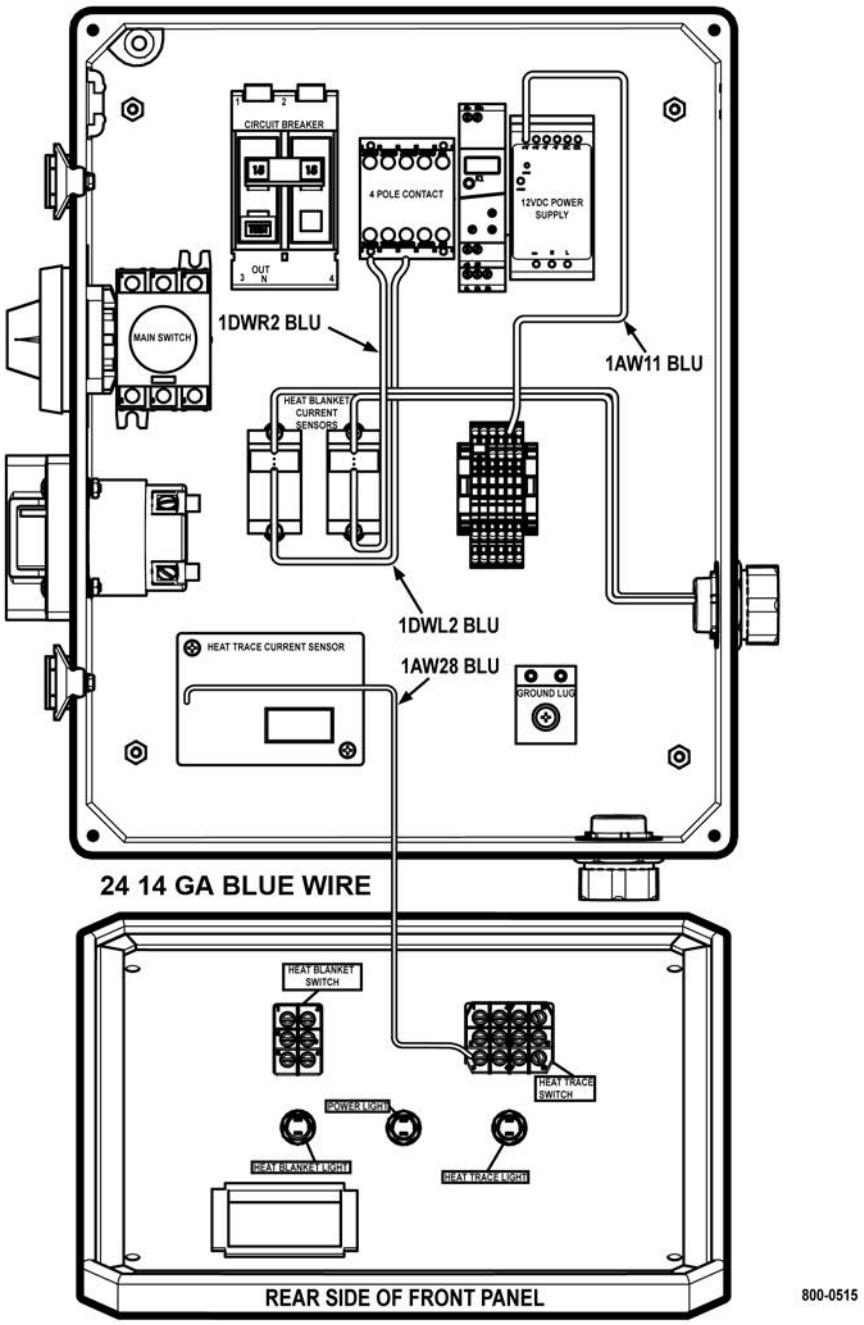


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 15 of 24)

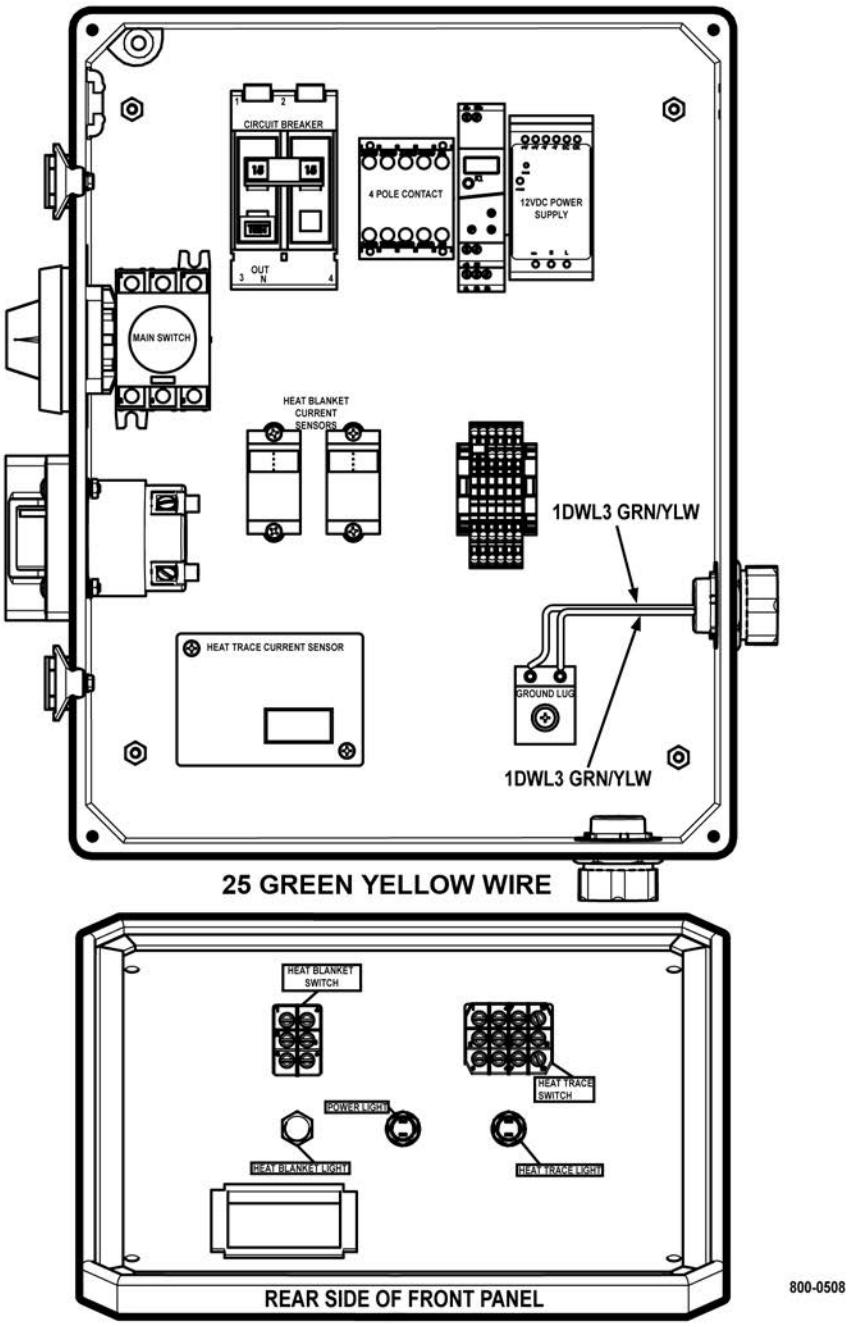


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 16 of 24)

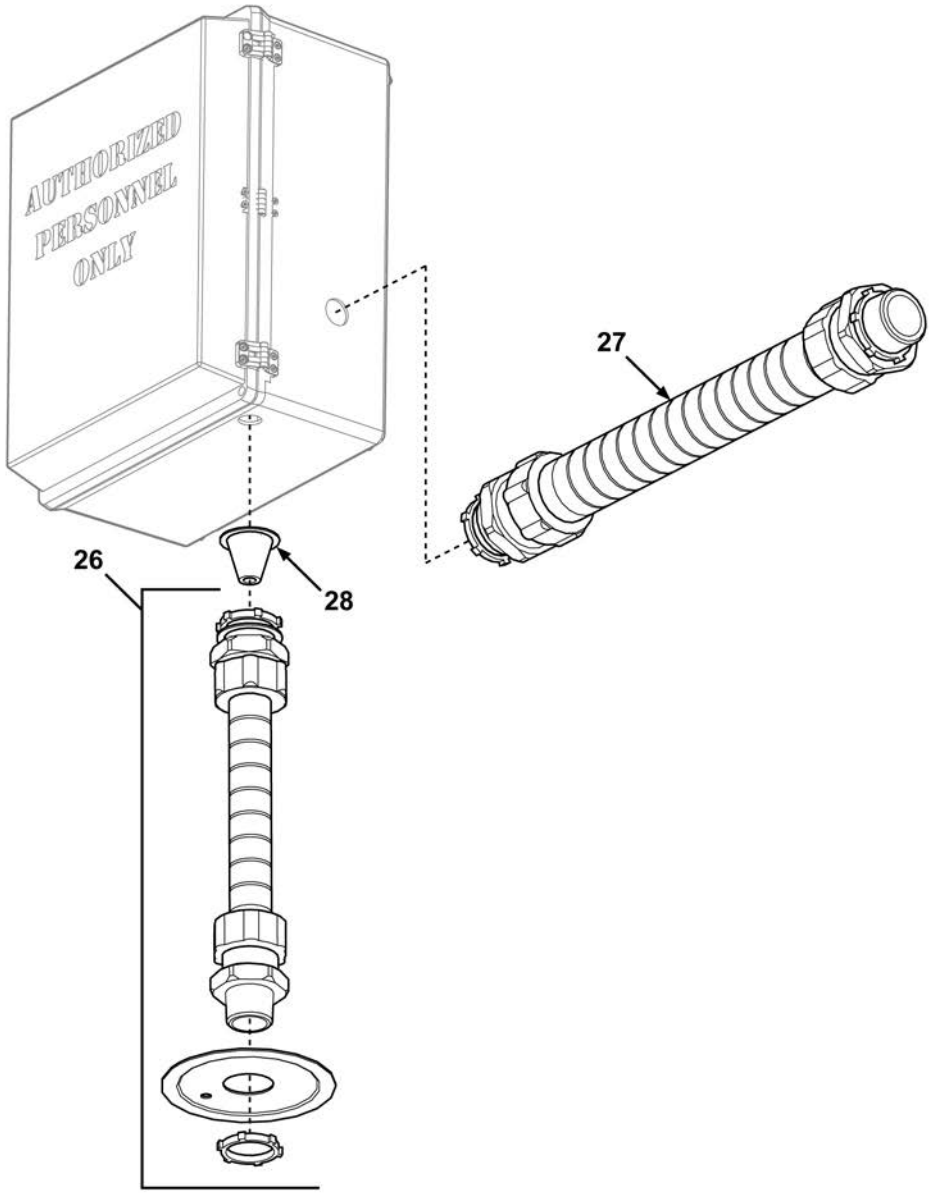


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 17 of 24)

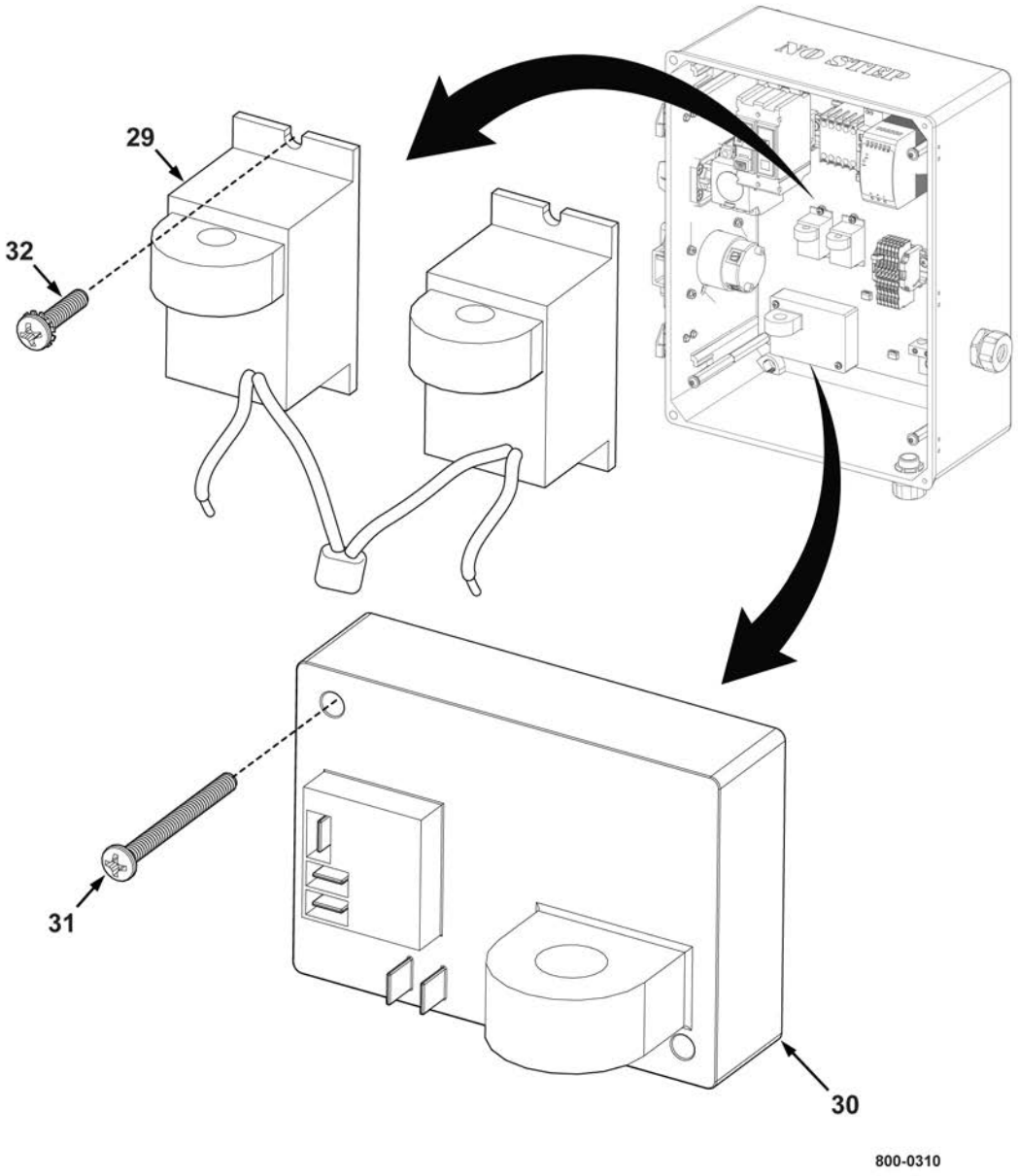


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 18 of 24)

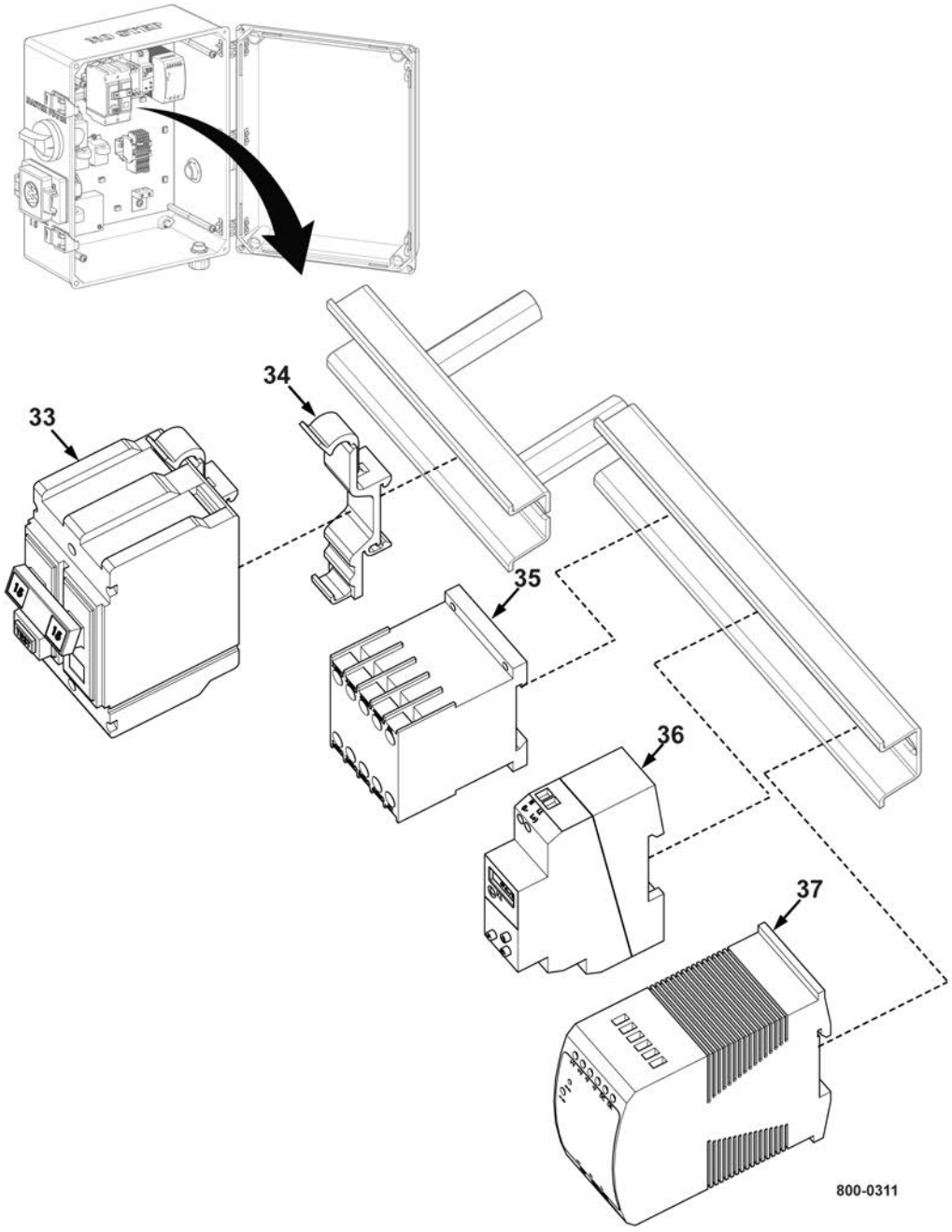


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 19 of 24)

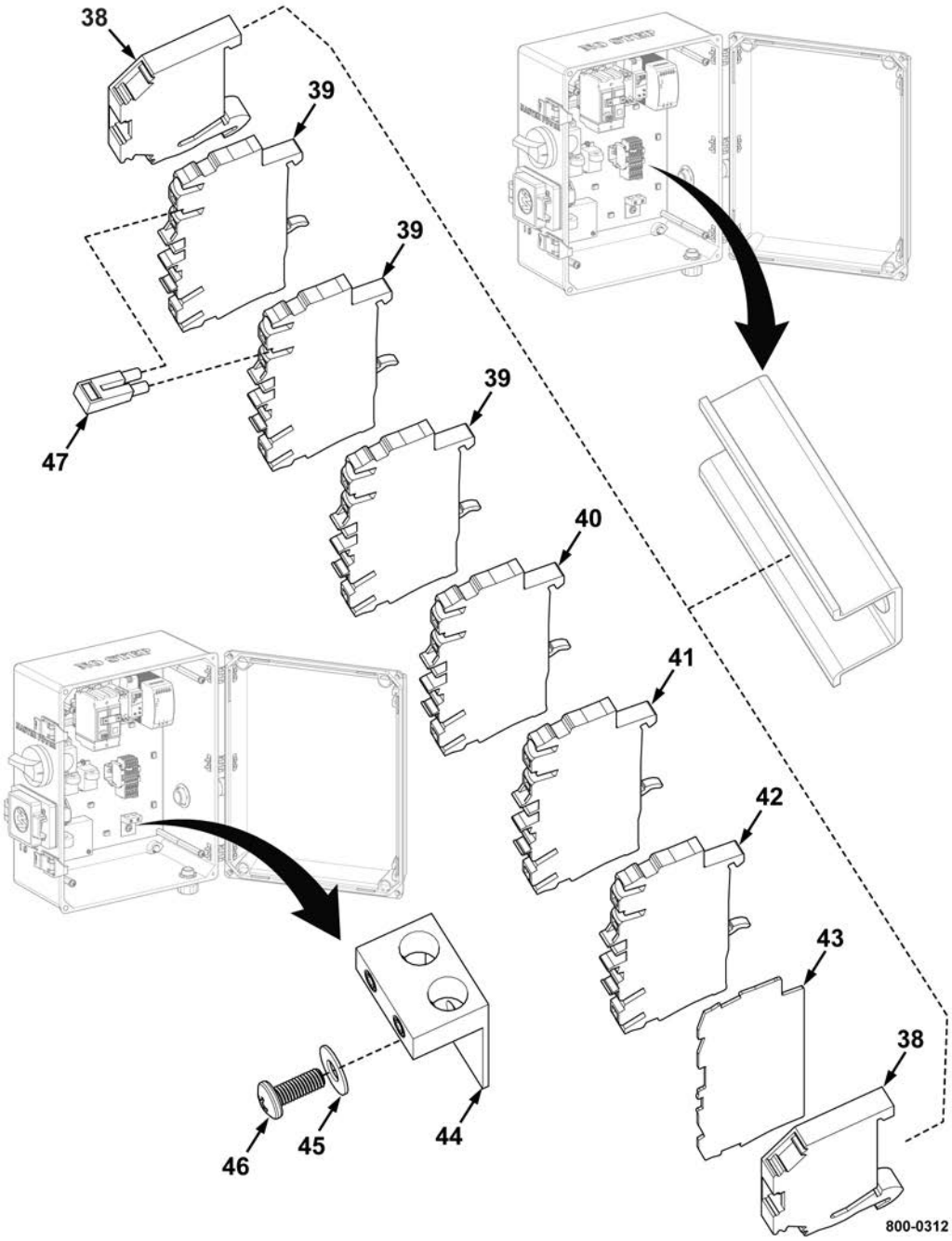


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 20 of 24)

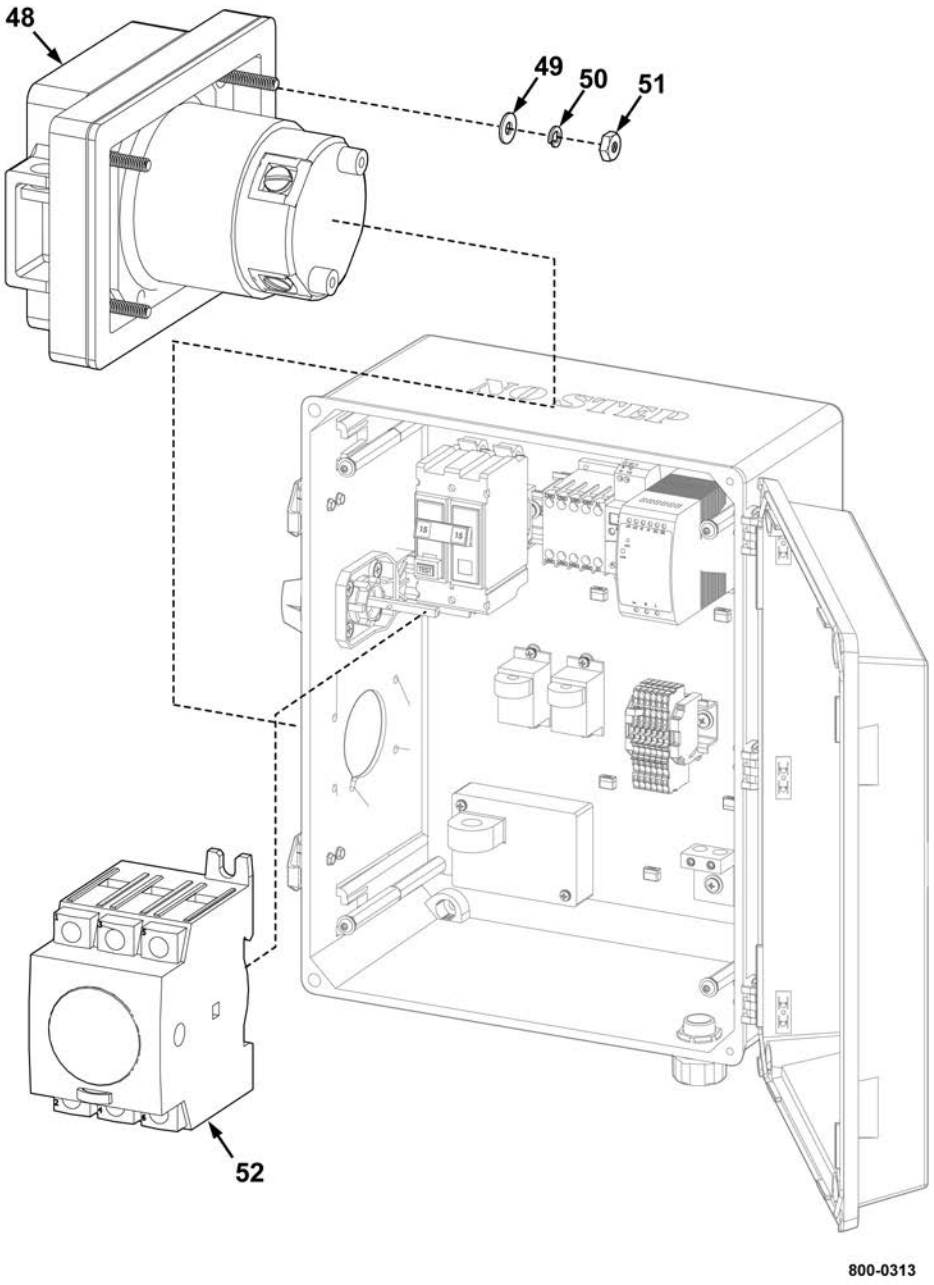


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 21 of 24)

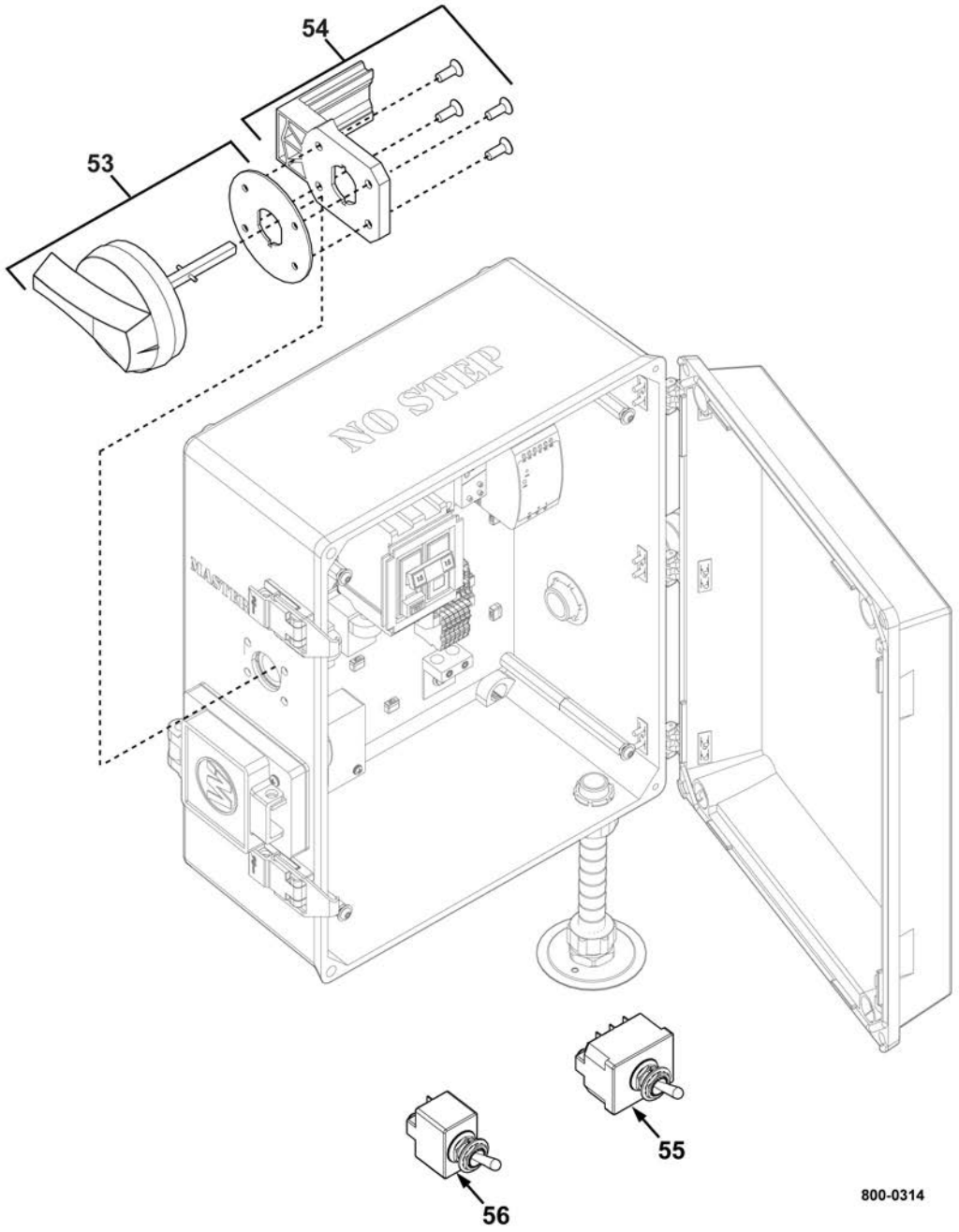


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 22 of 24)

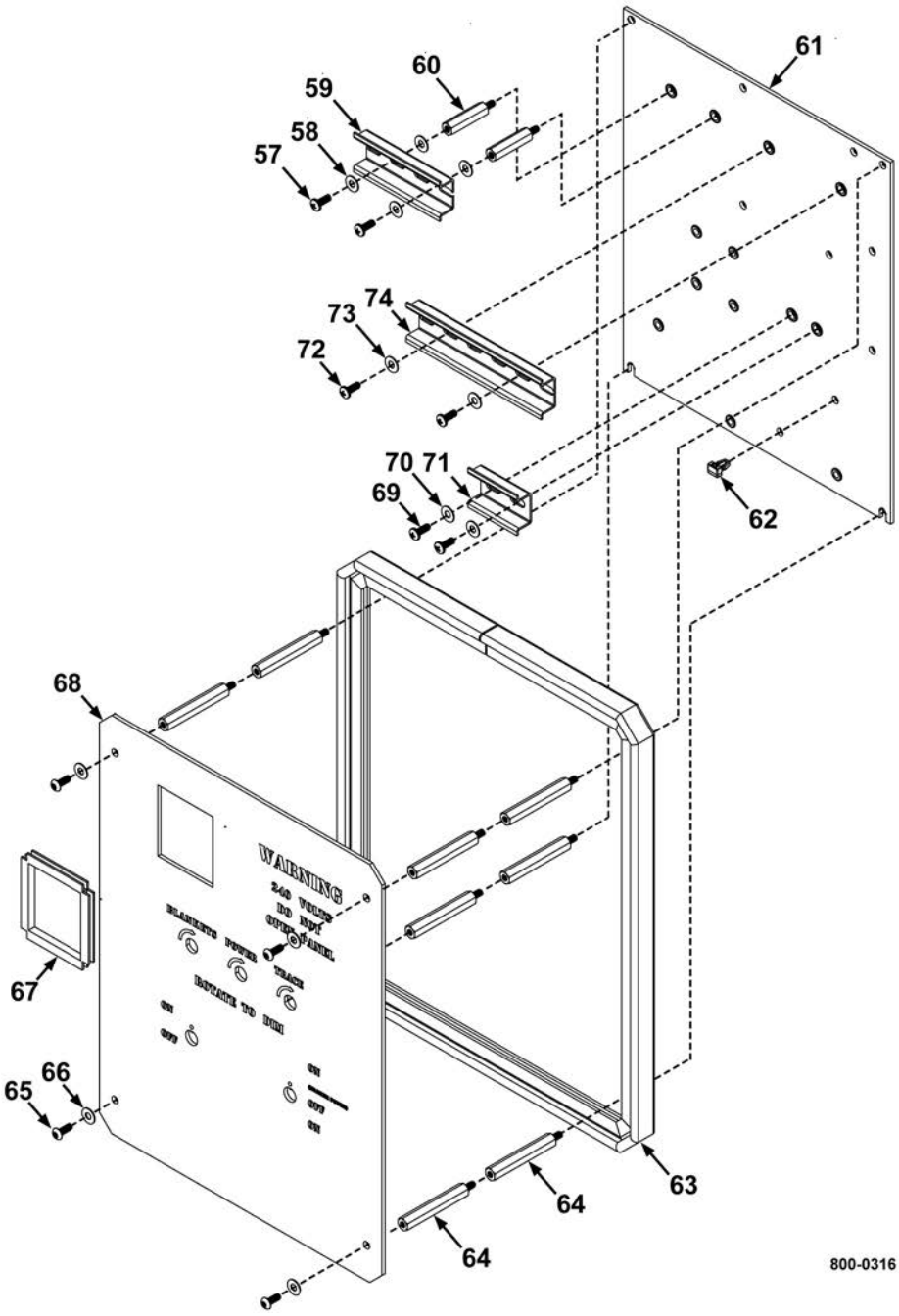


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 23 of 24)

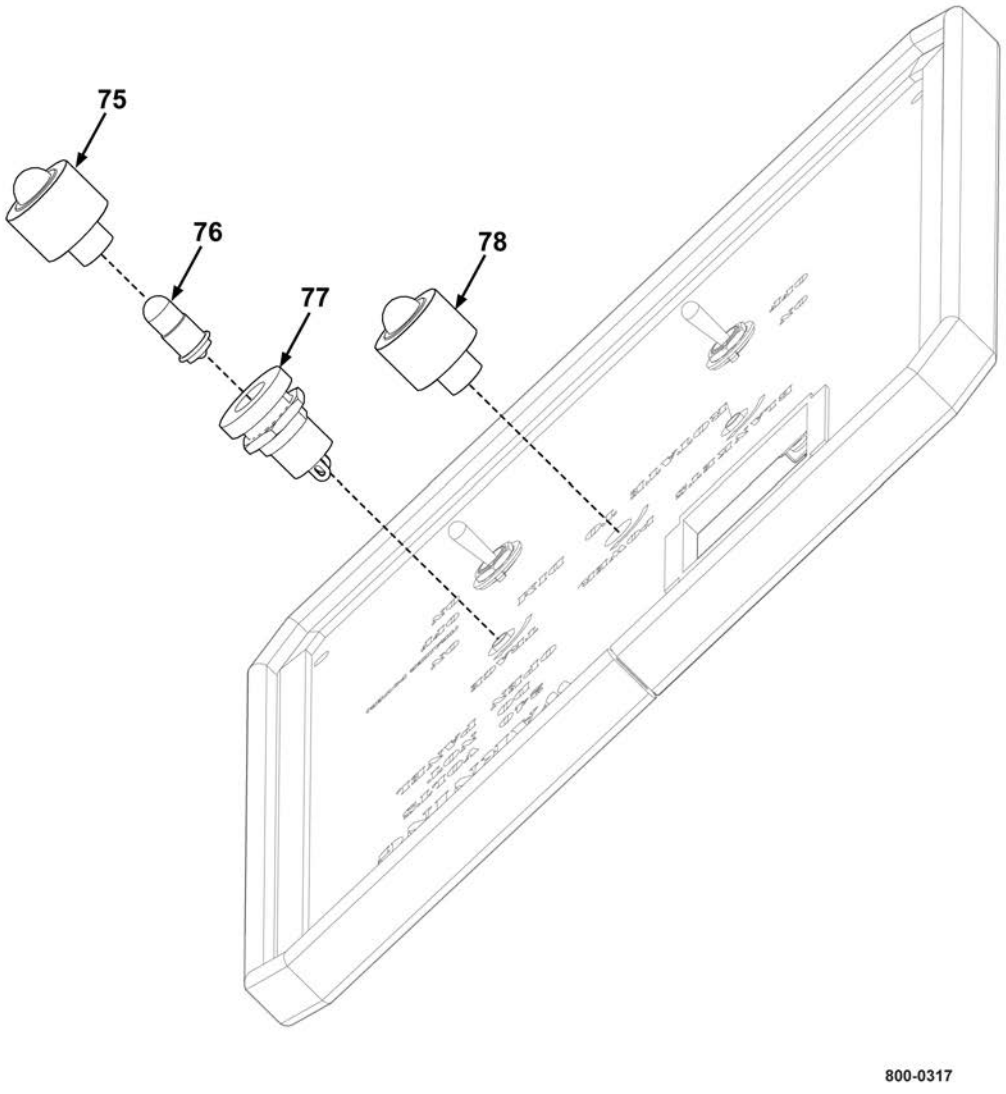


Figure 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT (Sheet 24 of 24)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0309 ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT	
					FIG. 18. ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT	
1	XDFFF		19207	12562605	ELECTRICAL ASSEMBLY COMPLETE, ENCLOSURE AND MOUNTING BRACKET UOC: UWP	1
2	PAFZZ	5305-01-564-5428	05047	AES01C250A00WA6DG1	. SCREW CAP, HEXAGON HEAD, YELLOW, ZNC FINISH SAE J429, GRADE 8, 1/4 IN X 20 X 1 IN UOC: UWP	4
3	PAFZZ	5310-01-570-0413	07070	1133618	. WASHER LOCK UOC: UWP	4
4	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	4
5	PFFZZ	5340-01-622-0612	4D3B0	12562518	. BRACKET MOUNTING, ELECTRICAL CONTROL BOX UOC: UWP	1
6	PAFFF	6150-01-620-2976	19207	12562522	. CONSOLE POWER DISTRIBUTION, CONSOLE BOX, ELECTRICAL ASSEMBLY UOC: UWP	1
7	PAFZZ	5305-01-564-5428	05047	AES01C250A00WA6DG1	. . SCREW CAP, HEXAGON HEAD, YELLOW, ZNC FINISH SAE J429, GRADE 8, 1/4 IN X 20 X 1 IN UOC: UWP	4
8	PAFZZ	5310-01-619-8705	57729	GJN075027XH	. . WASHER SEAL, NEOPRENE-BONDED GALV STL, 1/4 IN SCREW SIZE, 3/4 IN OD UOC: UWP	4
9	PAFZZ	5310-01-533-5638	39428	98023A029	. . WASHER FLAT, 1/4 IN UOC: UWP	4
10	PAFZZ	5310-01-621-4141	0Y3H3	1137183	. . NUT SELF-LOCKING, SINGLE BALL SEAT, HEXAGON, NYLON INSERT, YELLOW, ZINC FINISH NE, GRADE 8, 1/4 IN -20 UOC: UWP	4
11	PFFZZ	2540-01-620-2434	19207	12562521	. . BOX ACCESSORIES STOWAGE, ENCLOSURE, NEMA, 4X 16.00 X 12.00 X 8.00 UOC: UWP	1
12	PAFZZ	5340-01-626-2922	1WSN4	ZJFGSSR	. . . LATCH ELECTRICAL CONTROL, INCLUDES ATTACHING HARDWARE UOC: UWP	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
13	PAFZZ	5340-01-626-2974	1WSN4	ZJFGHNG	. . . HINGE BUTT, ELECTRICAL ASSEMBLY DOOR, INCLUDES ASSOCIATED SCREWS UOC: UWP	3
14	PFFZZ	5975-01-626-2483	1WSN4	Z16128CQRR	. . . COVER JUNCTION BOX, ELECTRICAL CONTROL BOX LID UOC: UWP	1
15	MFFZZ		39428	7587K078	. . WIRE ELECTRICAL, 18 GA, PURPLE, MAKE FROM BULK P/N 7587K078 (39428), CUT TO LENGTH UOC: UWP	5
16	MFFZZ		39428	7587K79	. . WIRE ELECTRICAL, 18 GA, BLUE, MAKE FROM BULK P/N 7587K79 (39428), CUT TO LENGTH UOC: UWP	17
17	MFFZZ		39428	7587K95	. . WIRE ELECTRICAL, 14 GA, GREEN, MAKE FROM BULK P/N 7587K95 (39428), CUT TO LENGTH UOC: UWP	11
18	MFFZZ		39428	7587K971	. . WIRE ELECTRICAL, 14 GA, BLACK, MAKE FROM BULK P/N 7587K971 (39428), CUT TO LENGTH UOC: UWP	31
19	MFFZZ		39428	7587K972	. . WIRE ELECTRICAL, 14 GA, RED, MAKE FROM BULK P/N 7587K972 (39428), CUT TO LENGTH UOC: UWP	1
20	MFFZZ		39428	7587K974	. . WIRE ELECTRICAL, 14 GA, WHITE, MAKE FROM BULK P/N 7587K974 (39428), CUT TO LENGTH UOC: UWP	11
21	MFFZZ		39428	7587K979	. . WIRE 14 GA, ORANGE, MAKE FROM BULK P/N 7587K979 (39428), CUT TO LENGTH UOC: UWP	1
22	MFFZZ		39428	7587K081	. . WIRE ELECTRICAL, 14 GA, PURPLE, MAKE FROM BULK P/N 7587K081 (39428), CUT TO LENGTH UOC: UWP	1
23	MFFZZ		39428	7587K061	. . WIRE ELECTRICAL, 14 GA, BROWN, MAKE FROM BULK P/N 7587K061 (39428), CUT TO LENGTH UOC: UWP	1
24	MFFZZ		39428	7587K98	. . WIRE ELECTRICAL, 14 GA, BLUE, MAKE FROM BULK P/N 7587K98 (39428), CUT TO LENGTH UOC: UWP	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
25	MFFZZ		39428	7587K051	. . WIRE ELECTRICAL, 14 GA, GREEN/YELLOW, MAKE FROM BULK P/N 7587K051 (39428), CUT TO LENGTH UOC: UWP	1
26	PAFZZ	5975-01-626-0997	19207	12562517	. . CONDUIT ASSEMBLY NONMETALLIC, ELECTRICAL, HEAT TRACE POWER UOC: UWP	1
27	PAFZZ	5975-01-626-0996	19207	12562529	. . CONDUIT ASSEMBLY NONMETALLIC, ELECTRICAL, HEAT BLANKET UOC: UWP	1
28	PAFZZ	5365-01-626-5040	19207	12562577	BUSHING SLEEVE, CONDUIT, RUBBER UOC: UWP	1
29	PAFZZ	6625-01-626-1008	19207	12562574	. . SENSOR CURRENT, AC UOC: UWP	1
30	PAFZZ	5945-01-621-7863	0SFN7	CR5395-EH-ACV-110-X-FP-ELR-I	. . RELAY HYBRID, SWITCH, HEAT TRACE CURRENT SENSOR, DC, MOUNTED UOC: UWP	1
31	PAFZZ	5305-01-619-8790	5B4N5	06150PPIZN	. . SCREW MACHINE, ZNC-PLTD STL, PAN HEAD, PHILLIPS, INTERNAL WASHER, 6-32, 1-1/2 IN LENGTH UOC: UWP	2
32	PAFZZ	5305-01-621-2386	39428	90402A150	. . SCREW ASSEMBLED WASHER, MACHINE, EXTERNAL WASHER, ZNC-PLTD STL, PAN HEAD, PHILLIPS, 6-32 X 5/8 IN LENGTH UOC: UWP	2
33	PAFZZ	5925-01-487-6229	53711	QCGF2015	. . CIRCUIT BREAKER GFCI UOC: UWP	1
34	PAFZZ	5340-01-620-9703	1FKR6	QCDINADAPT	. . ADAPTER MOUNTING, DINRAIL, QC, CIRCUIT BREAKER UOC: UWP	2
35	PAFZZ	5935-01-621-7188	3B047	CA2KN40G7	. . CONNECTOR PLUG, ELECTRICAL, CONTACTOR, 4 POLE, N.O., 120 VAC UOC: UWP	1
36	PAFZZ	6685-01-621-7190	0P841	701050/811-05-061	. . THERMOMETER SELF-INDICATING, HEAT BLANKET THERMOSTAT, ELTC, 11/N 0-100C, 120V UOC: UWP	1
37	PFFZZ	6130-01-614-4683	532A1	MDR-60-12	. . POWER SUPPLY 12VDC, 5A, 60W UOC: UWP	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
38	PAFZZ	5940-01-547-8605	65996	249-116	. . TERMINAL JUNCTION B SECTIONAL, END STOP, DIN RAIL UOC: UWP	2
39	PAFZZ	5940-01-619-9480	39428	9473T228	. . TERMINAL JUNCTION B SECTIONAL, BLACK, DIN RAIL UOC: UWP	3
40	PAFZZ	5940-01-619-8813	39428	9473T184	. . TERMINAL JUNCTION B SECTIONAL, BLUE, DIN RAIL UOC: UWP	1
41	PAFZZ	5940-01-619-9482	39428	9473T183	. . TERMINAL JUNCTION B SECTIONAL, GRAY, DIN RAIL UOC: UWP	1
42	PAFZZ	5940-01-619-9481	39428	9473T185	. . TERMINAL JUNCTION B SECTIONAL, ORANGE, DIN RAIL UOC: UWP	1
43	PAFZZ	5340-01-619-9339	65996	2002-1492	. . COVER ACCESS, END, ORANGE, DIN RAIL UOC: UWP	1
44	PAFZZ	5940-01-593-9518	3A054	6920K51	. . TERMINAL LUG, GROUND UOC: UWP	1
45	PAFZZ	5310-01-506-1887	39428	90126A514	. . WASHER FLAT UOC: UWP	13
46	PAFZZ	5305-01-340-0423	39428	90272A829	. . SCREW MACHINE UOC: UWP	1
47	PFFZZ	5999-12-393-3125	39428	9473T193	. . STRIP SHORTING, JUMPER, STD 4.2MM, WIDTH QUICK & SECURE, DIN-RAIL MOUNT, TERMINAL BLOCK UOC: UWP	1
48	PAFZZ	5935-01-620-8402	1UX99	130147-0159	. . CONNECTOR BODY RECEPTACLE, ELECTRICAL, EXTERNAL POWER PLUG, NEMA 14L-30, FLIP LID, MALE, WATERTIGHT, 30A UOC: UWP	1
49	PAFZZ	5310-01-592-0135	39428	96659A102	. . WASHER FLAT UOC: UWP	4
50	PAFZZ	5310-01-534-7832	39428	92146A540	. . WASHER LOCK UOC: UWP	4
51	PAFZZ	5310-01-485-0790	39428	91841A007	. . NUT PLAIN, HEXAGON UOC: UWP	4
52	PAFZZ	5930-01-623-0636	3LVG5	R5A3016U	. . SWITCH ROTARY, MAIN POWER, NON-FUSIBLE, ROTARY DISCONNECT UOC: UWP	1
53	PAFZZ	5930-01-621-4133	1TMY5	SHB0N4X	. . HANDLE SWITCH, MAIN POWER, SIZE 0, WITH LOCKOUT, NEMA 4X UOC: UWP	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
54	PFFZZ	5340-01-621-4128	1TMY5	DMK	. . HARDWARE KIT ELECTRONIC EQUIPMENT, ASSEMBLY, MAIN POWER, HANDLE FLUSH MOUNT, HARDWARE INCLUDED UOC: UWP	1
55	PAFZZ	5930-00-660-3952	96906	MS24525-21	. . SWITCH TOGGLE, HEAT TRACE UOC: UWP	1
56	PAFZZ	5930-00-655-4241	96906	MS24524-23	. . SWITCH TOGGLE, HEAT BLANKET UOC: UWP	1
57	PAFZZ	5305-01-340-0423	39428	90272A829	. . SCREW MACHINE, PAN HEAD, 10-32 X 1/2 IN UOC: UWP	2
58	PAFZZ	5310-01-506-1887	39428	90126A514	. . WASHER FLAT UOC: UWP	13
59	PFFZZ	5340-01-619-9433	4D3B0	12562523-3	. . BRACKET MULTIPLE ANGLE, GFCI DIN RAIL, 15MM X 35MM X 75MM UOC: UWP	1
60	PAFZZ	5340-01-621-7883	39428	93620A178	. . STANDOFF THREADED, SPACING, HEX, STL, ZNC-PLTD, MALE-FEMALE THREAD, 3/8 IN, 1-1/2 IN LENGTH, 10-32 UOC: UWP	2
61	PFFZZ	5975-01-620-1006	19207	12562507	. . PANEL ELECTRICAL-ELECTRIONIC EQUIPMENT, CONTROL BOX, REAR UOC: UWP	1
62	PAFZZ	5975-01-621-1400	5MST4	PM2H25-C	. . MOUNTING BASE TIEDOWN, ELECTRICAL, WIRE TIE, PUSH IN MOUNT UOC: UWP	10
63	PFFZZ	5330-01-619-8961	19207	12562600	. . SEAL NONMETALLIC STRIP, ELECTRICAL PANEL, FRONT UOC: UWP	1
64	PAFZZ	5340-01-619-9280	39428	93620A028	. . STAND-OFF THREADED, SPACING, HEX, 3/8, 10-32 X 2.5L UOC: UWP	8
65	PAFZZ	5305-01-533-5464	39428	91306A356	. . SCREW CAP, SOCKET HEAD UOC: UWP	4
66	PAFZZ	5310-01-506-1887	39428	90126A514	. . WASHER FLAT UOC: UWP	5
67	PAFZZ	9390-01-620-0857	4D3B0	12562601	. . NONMETALLIC CHANNEL MOLDING, TRIM, CIRCUIT BREAKER WINDOW UOC: UWP	1
68	PFFZZ	5340-01-620-5438	19207	12562520	. . PANEL BLANK, ELECTRICAL CONTROL BOX, FRONT UOC: UWP	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
69	PAFZZ	5305-01-340-0423	39428	90272A829	. . SCREW MACHINE, PAN HEAD, 10-32 X 1/2 IN UOC: UWP	2
70	PAFZZ	5310-01-506-1887	39428	90126A514	. . WASHER FLAT UOC: UWP	13
71	PFFZZ	5340-01-620-2622	19207	12562523-1	. . BRACKET MULTIPLE ANGLE, RAIL, TERMINAL BLOCK DIN, 15MM X 35MM X 50MM UOC: UWP	1
72	PAFZZ	5305-01-340-0423	39428	90272A829	. . SCREW MACHINE, PAN HEAD, 10-32 X 1/2 IN UOC: UWP	2
73	PAFZZ	5310-01-506-1887	39428	90126A514	. . WASHER FLAT UOC: UWP	13
74	PFFZZ	5340-01-620-4748	19207	12562523-2	. . BRACKET MULTIPLE ANGLE, RAIL, ELECTRICAL COMPONENT DIN, 15MM X 35MM X 125MM UOC: UWP	1
75	PAFZZ	6210-01-622-4505	83330	160-0113-203	. . LENS LIGHT, AMBER INDICATOR, BLACK-OUT UOC: UWP	2
76	PAFZZ	6240-01-625-0169	03NY8	70152673	. . LAMP INCANDESCENT, BULB, INDICATOR LIGHT, T-1 3/4 MIDGET, FLANGED, 12V UOC: UWP	3
77	PAFZZ	6210-00-176-4928	81349	MIL-L-3661/47A LH89/1	. . HOUSING LIGHT, INDICATOR, LAMPHOLDER, WATER TIGHT UOC: UWP	3
78	PAFZZ	6210-00-151-5276	81349	LC36GD2	. . LENS LIGHT, GREEN INDICATOR, BLACK-OUT UOC: UWP	1

END OF FIGURE

FIELD MAINTENANCE
CHEMICAL STORAGE BOX ASSEMBLY

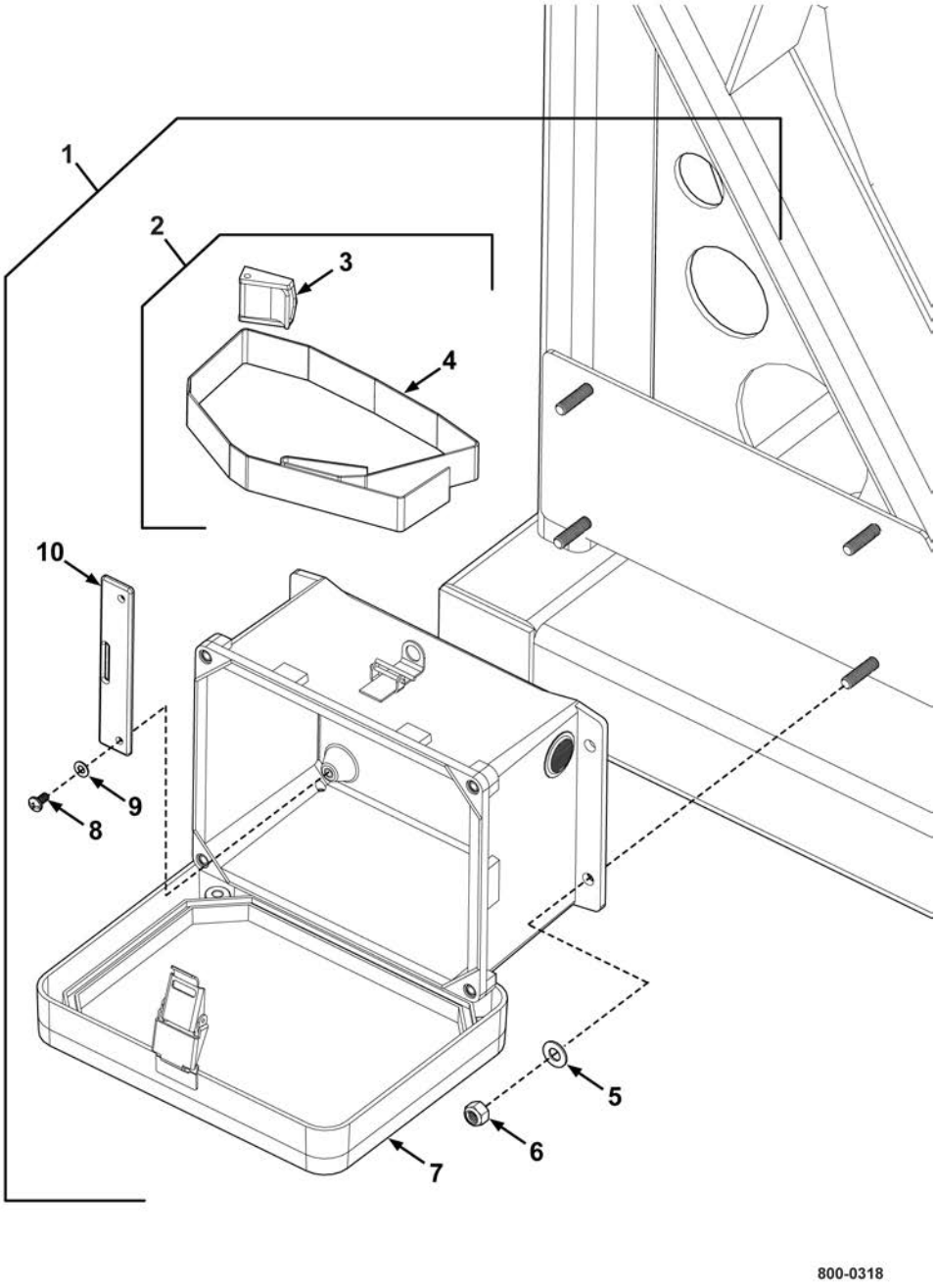


Figure 19. CHEMICAL STORAGE BOX ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0310 CHEMICAL STORAGE BOX ASSEMBLY	
					FIG. 19. CHEMICAL STORAGE BOX ASSEMBLY	
1	PAFFF	2540-01-620-2618	19207	12562587	BOX ACCESSORIES STOWAGE, CHEMICAL STORAGE ASSEMBLY, CHLORINE UOC: UWP	1
2	PAFZZ	5340-01-620-7021	19207	12562585	. STRAP WEBBING, ASSEMBLY, CHLORINE CHEMICAL HOLD UOC: UWP	1
3	PAFZZ	5340-01-608-5411	39428	29705T29	. . BUCKLE PLASTIC, NO SEW ON, QUICK-TIGHT FOR 1 IN WIDE WEBBING UOC: UWP	1
4	PAFZZ	5340-01-620-4068	19207	12562585-01	. . STRAP WEBBING, CHEMICAL HOLD UOC: UWP	1
5	PAFZZ	5310-01-620-6382	39428	98017A689	. WASHER FLAT, 300 SERIES STAINLESS STEEL, .0562 OD UOC: UWP	4
6	PAFZZ	5310-01-466-7850	5T389	H001145	. NUT SELF-LOCKING, HEXAGON UOC: UWP	4
7	PAFZZ	5340-01-620-5431	19207	12562607	. CHEMICAL BOX ENCLOSURE, FIBERGLASS, MODIFIED, NEMA 6P/12, STOWAGE UOC: UWP	1
8	PAFZZ	5305-01-585-9156	39428	90272A826	. SCREW MACHINE UOC: UWP	4
9	PAFZZ	5310-01-506-1887	39428	90126A514	. WASHER FLAT UOC: UWP	4
10	PFFZZ	2590-01-620-0383	4D3B0	12562586	. BRACKET VEHICULAR COMPONENTS, MOUNTING PLATE, CHEMICAL BOX STRAP UOC: UWP	2
					END OF FIGURE	

FIELD MAINTENANCE
DISCHARGE BOX WOOL INSULATION

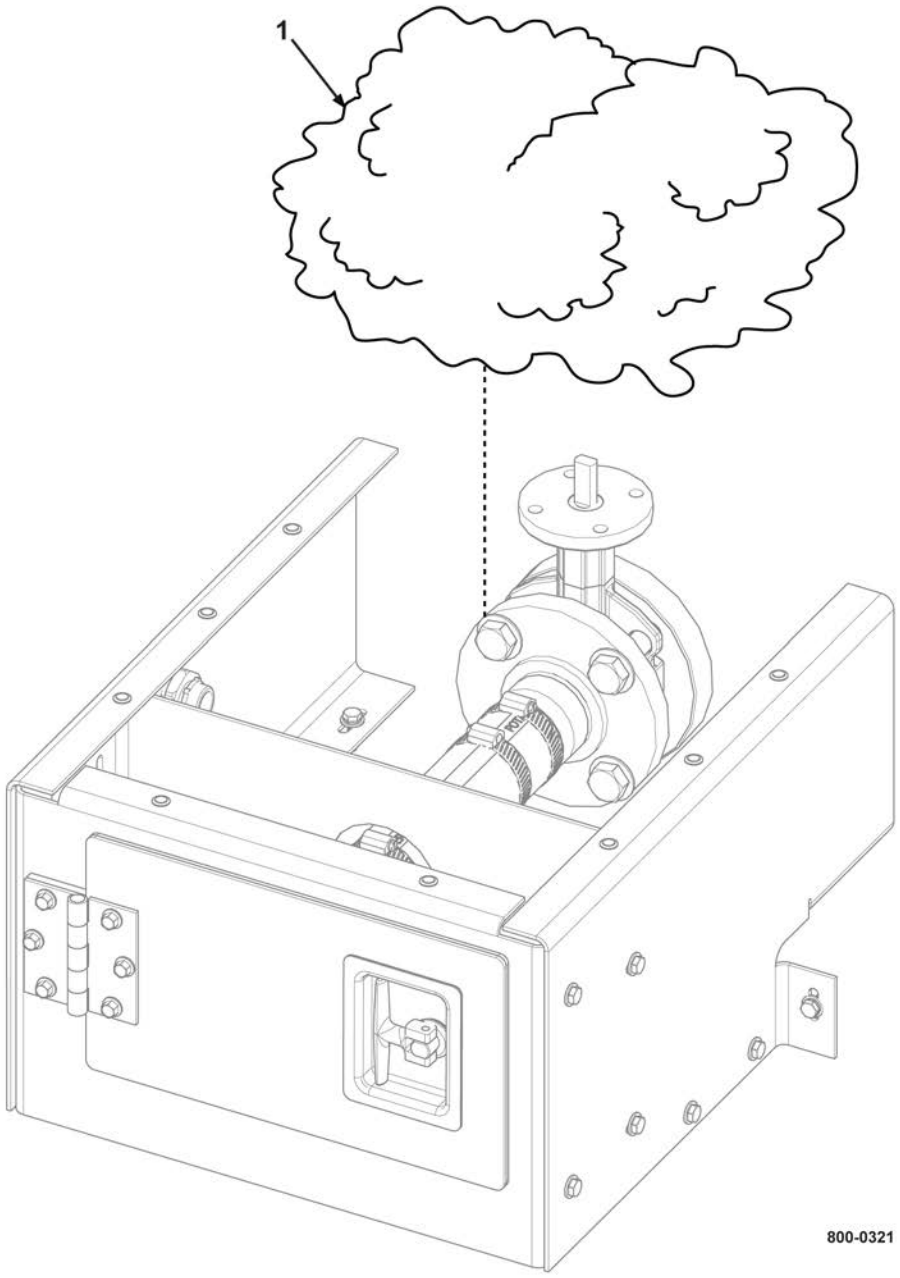


Figure 20. DISCHARGE BOX WOOL INSULATION

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0311 DISCHARGE BOX WOOL INSULATION	
					FIG. 20. DISCHARGE BOX WOOL INSULATION	
1	PAFZZ	5640-01-621-2456	39428	9332K65	MINERAL WOOL INSULA VERY HIGH TEMP, 30-LB BAG, DISCHARGE BOX UOC: UWP	V
					END OF FIGURE	

FIELD MAINTENANCE
MAIN DISPENSING VALVE ASSEMBLY

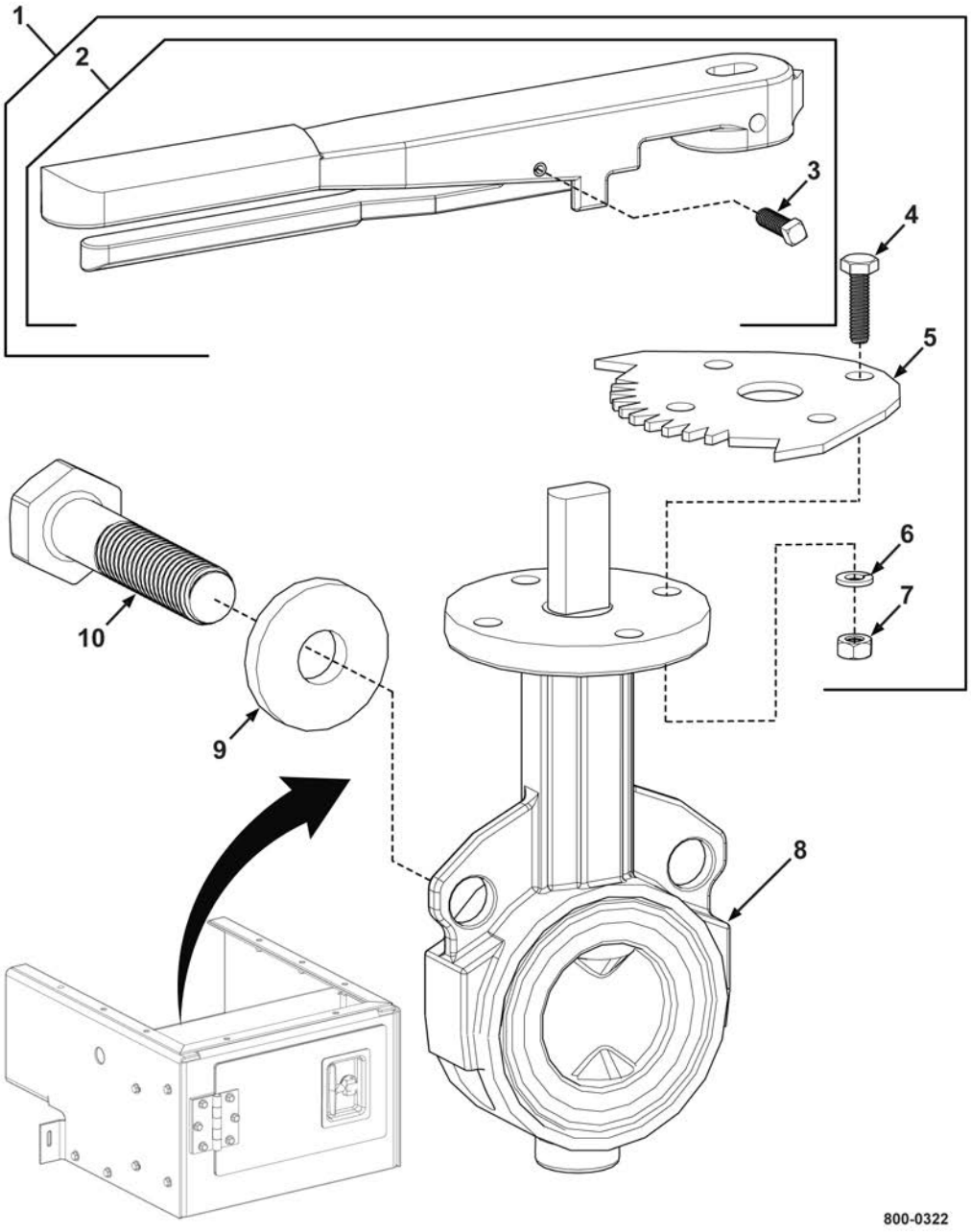


Figure 21. MAIN DISPENSING VALVE ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0312 MAIN DISPENSING VALVE ASSEMBLY	
					FIG. 21. MAIN DISPENSING VALVE ASSEMBLY	
1	PAFFF	5340-01-620-5579	19207	12562516	HANDLE MANUAL CONTROL, KIT, VALVE UOC: UWP	1
2	PAFZZ	5340-01-620-6755	0W7W3	010200-11100006	. LEVER MANUAL CONTROL, HANDLE, MAIN DISPENSING, BRAY VALVE UOC: UWP	1
3	PAFZZ	5305-01-626-7986	0W7W3	071110-72101534	. SETSCREW DISPENSING HANDLE UOC: UWP	1
4	PAFZZ	5305-01-451-9220	39428	92865A542	. SCREW CAP, HEXAGON HEAD, . 25-20 X 1.00, ZINC PLATED STEEL UOC: UWP	2
5	PAFZZ	5340-01-620-6756	0W7W3	020200-70010529	. PLATE MOUNTING, LOCK, NOTCHED, MAIN DISPENSING UOC: UWP	1
6	PAFZZ	5310-01-483-5290	39428	91475A029	. WASHER LOCK, .25 IN UOC: UWP	2
7	PAFZZ	5310-01-592-6904	3A054	95505A601	. NUT PLAIN, HEXAGON, .25-20 UOC: UWP	2
8	PAFZZ	4820-01-621-5180	19207	12562515	VALVE BUTTERFLY, ASSY, MAIN DISPENSING, BRAY, 2 IN 30 SERIES, MODIFIED UOC: UWP	1
9	PAFZZ	5310-01-559-8143	07BY4	91950A035	WASHER FLAT, FLANGE MOUNT UOC: UWP	4
10	PAFZZ	5305-01-620-7391	97852	2-H-62C-325	BOLT CAP, HEXAGON HEAD, 5/8 IN X 3 1/4 IN LONG, FLANGE MOUNT UOC: UWP	4
					END OF FIGURE	

FIELD MAINTENANCE
HEAT TRACE

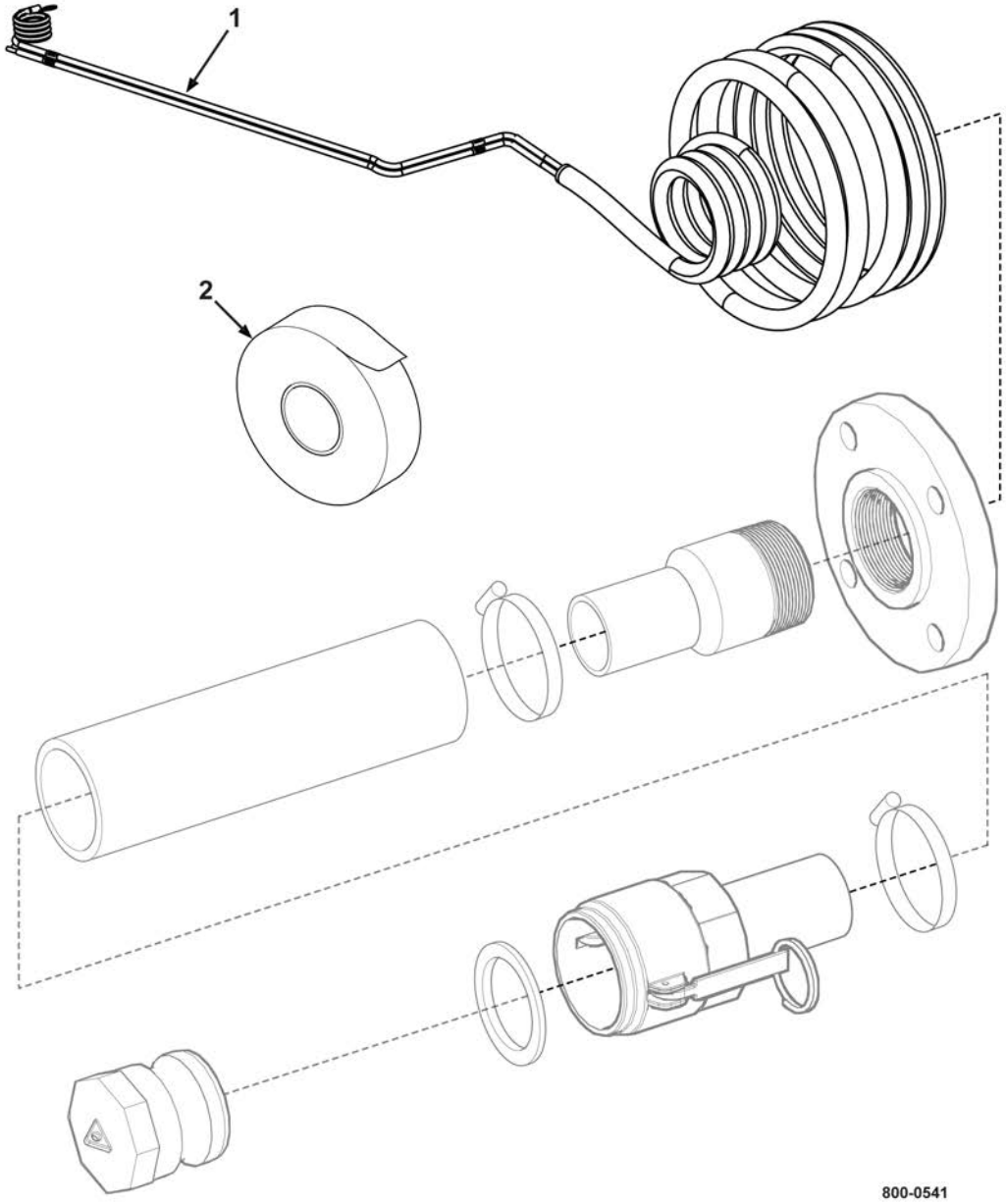


Figure 22. HEAT TRACE

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0313 HEAT TRACE	
					FIG. 22. HEAT TRACE	
1	PAFZZ	6145-01-621-8739	19207	12562612	TRACER HEAT TRACE ASSEMBLY, 12 VOLT, 5 WT, 6 FT UOC: UWP	1
2	XDFZZ		39428	7643A76	SILICONE TAPE 2 IN WIDTH, HIGH-TEMPERATURE, SELF FUSING, 12 YD LENGTH UOC: UWP	V
					END OF FIGURE	

FIELD MAINTENANCE
DISCHARGE HOSE EXTENSION ASSEMBLY

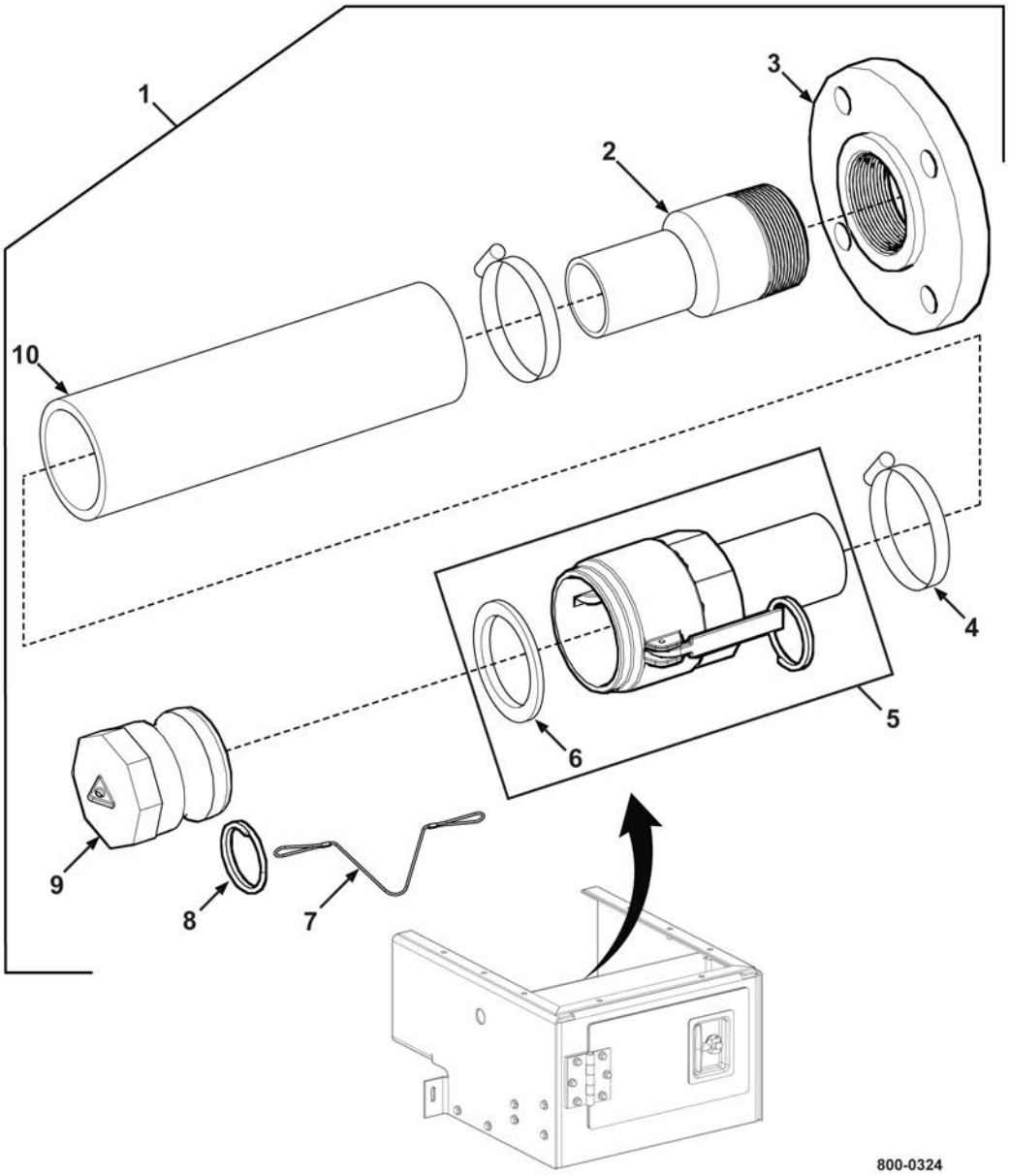


Figure 23. DISCHARGE HOSE EXTENSION ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0314 DISCHARGE HOSE EXTENSION ASSEMBLY	
					FIG. 23. DISCHARGE HOSE EXTENSION ASSEMBLY	
1	PAFFF	4730-01-620-4013	19207	12562450	COUPLING QUICK DISCONNECT, DISCHARGE ASSEMBLY, HOSE EXTENSION UOC: UWP	1
2	PAFZZ	4730-01-619-9441	39428	5363K76	. ADAPTOR STRAIGHT, HOSE TO BOSS, HOSE BARB, 2 IN 316SS SHANK UOC: UWP	1
3	PAFZZ	4730-01-620-0551	51HR4	101506	. FLANGE PIPE, 6 IN OD, 2 IN FNPT UOC: UWP	1
4	PAFZZ	4730-01-490-4191	39428	54225K64	. CLAMP HOSE UOC: UWP	4
5	PAFZZ	4730-01-620-6746	61125	C-030-03032-4321	. COUPLING HOSE, QUICK DISCONNECT, HALF, 2 IN, FEMALE X 2 IN FNPT, TYPE V UOC: UWP	1
6	PCFZZ	5330-00-612-2414	58536	AA59326-G6	. . GASKET CIRCULAR UOC: UWP	1
7	PAFZZ	4010-01-608-4893	39428	30345T23	. WIRE ROPE ASSEMBLY SINGLE LEG UOC: UWP	1
8	PAFZZ	5325-01-468-9368	39428	90905A655	. RING RETAINING UOC: UWP	1
9	PAFZZ	4730-01-608-4948	58536	AA59326/11-6-SS	. COUPLING HALF QUICK DISCONNECT, MALE UOC: UWP	1
10	PAFZZ	4720-01-621-4929	58536	AA59566-A-A-2-020-010	. HOSE NONMETALLIC, 2 IN ID POTABLE WATER UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
DISCHARGE BOX ASSEMBLY

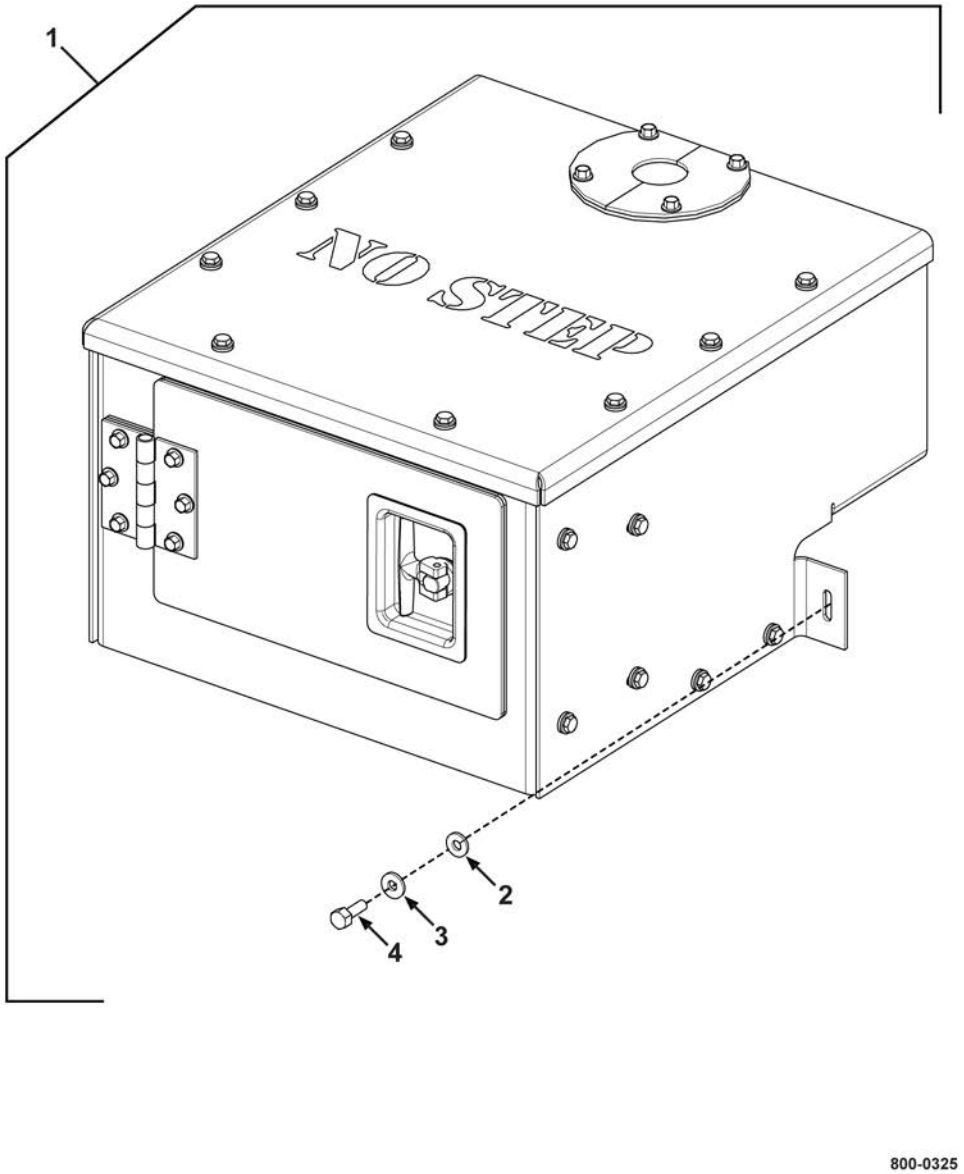


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 1 of 6)

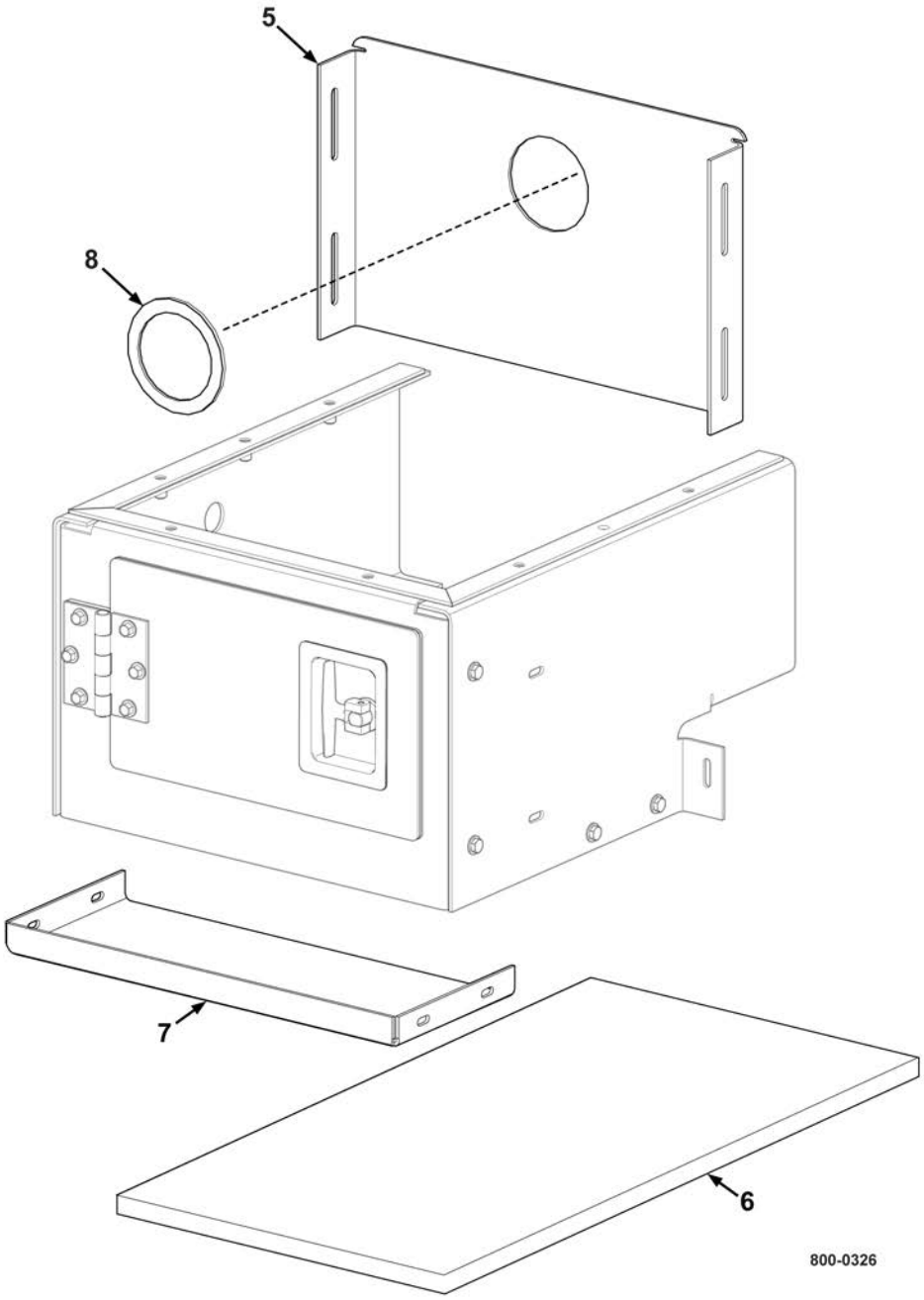


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 2 of 6)

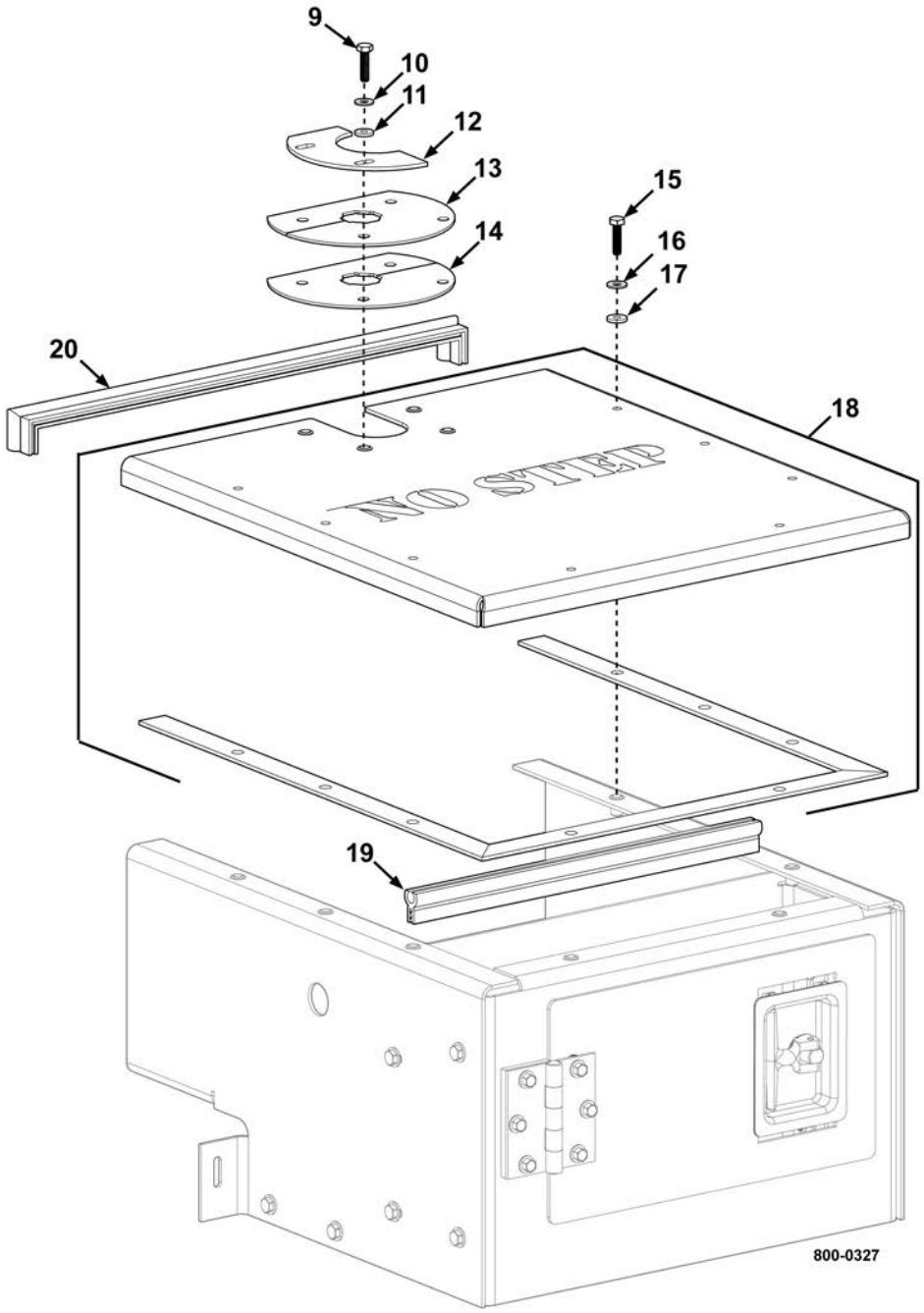


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 3 of 6)

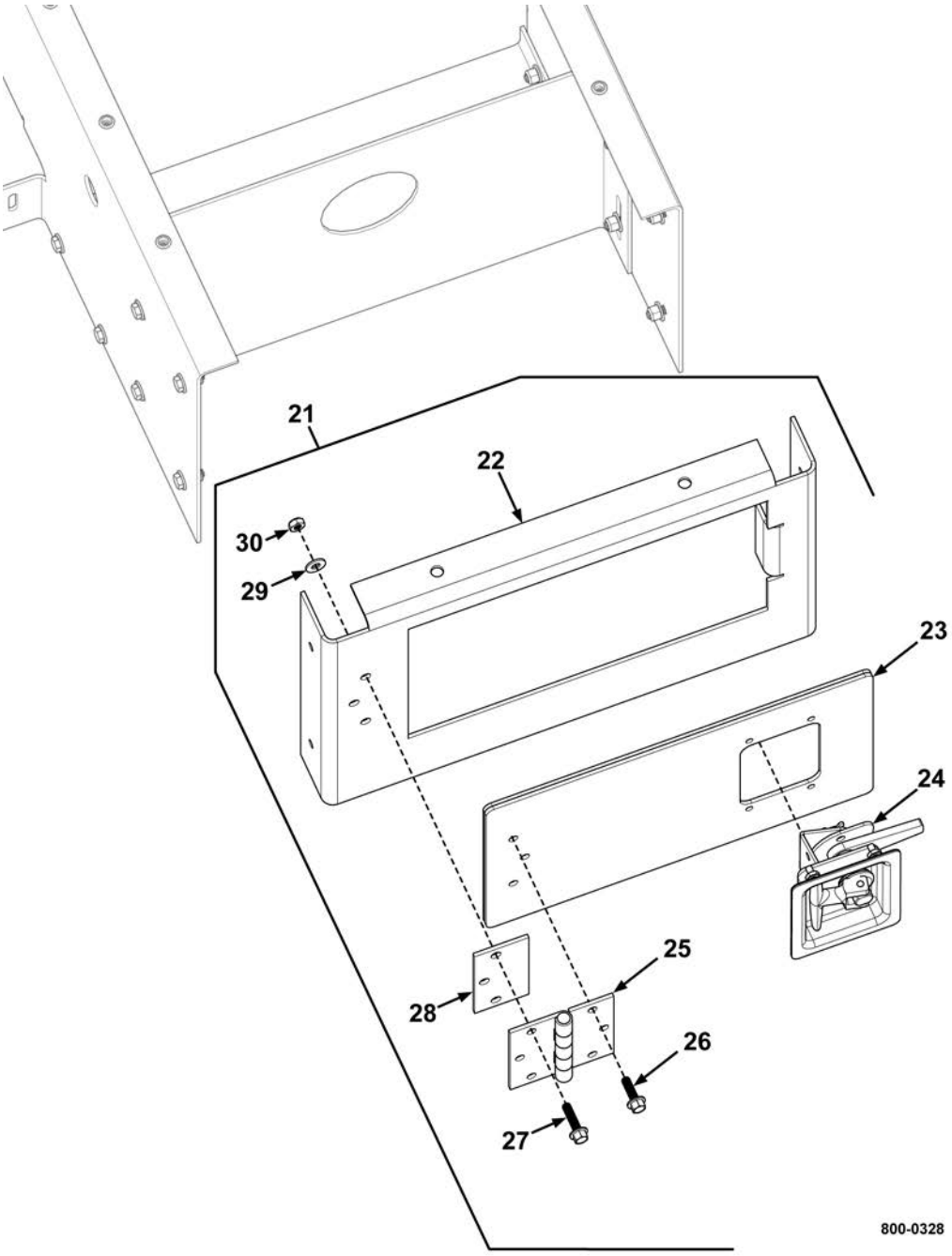


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 4 of 6)

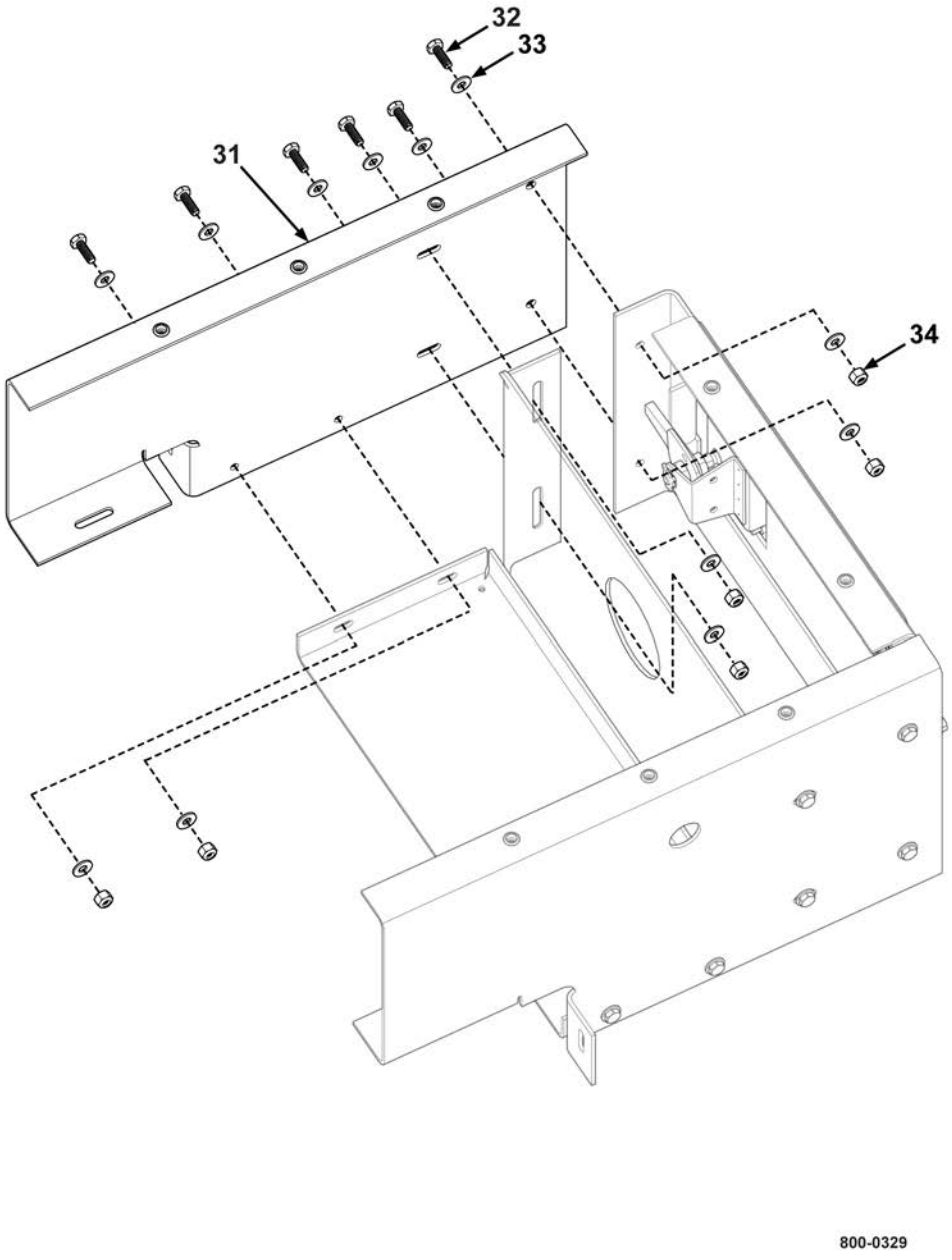


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 5 of 6)

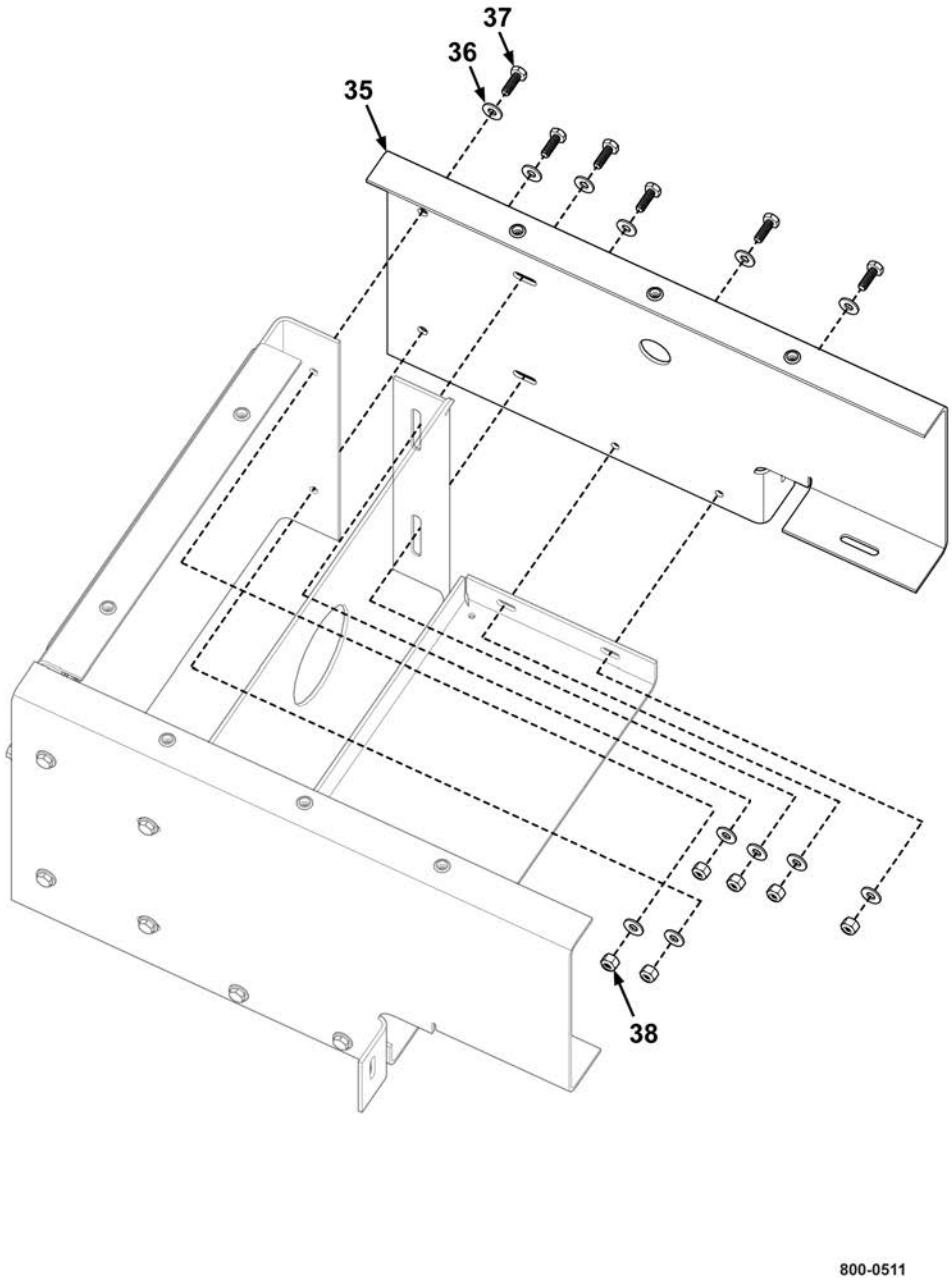


Figure 24. DISCHARGE BOX ASSEMBLY (Sheet 6 of 6)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0315 DISCHARGE BOX ASSEMBLY	
					FIG. 24. DISCHARGE BOX ASSEMBLY	
1	PAFFF	5340-01-619-9821	19207	12562514	COVER ACCESS, DISCHARGE BOX ASSEMBLY UOC: UWP	1
2	PAFZZ	5310-01-570-0413	07070	1133618	. WASHER LOCK UOC: UWP	4
3	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	4
4	PAFZZ	5305-01-564-5768	0Y3H3	15003	. BOLT 1/4 IN -20X3/4 IN UOC: UWP	4
5	PAFZZ	5340-01-622-1729	19207	12562502	. BRACKET DOUBLE ANGLE, INNER PANEL, DISCHARGE BOX, VALVE SUPPORT UOC: UWP	1
6	PAFZZ	5640-01-622-7146	09QK8	69100050	. INSULATION BLANKET THERMAL, DISCHARGE BOX, POLYISOCYANURATE, FOIL BACKED, 1 IN X 4' X 8', 32 FT^2 UOC: UWP	1
7	PAFZZ	5340-01-619-9349	4D3B0	12562519	. BRACKET MOUNTING, DISCHARGE BOX BOTTOM PANEL UOC: UWP	1
8	PAFZZ	5325-01-621-4511	14829	2250	. GROMMET NONMETALLIC, DISCHARGE HOSE, SNAP-IN, FITS 2.25 IN TO 2.37 IN PIPE DIA UOC: UWP	1
9	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD, 1/4 IN -20 X 3/4 IN , YELLOW, ZNC FINISH, SAE J429, GRADE 8 UOC: UWP	4
10	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	4
11	PAFZZ	5310-01-620-0650	39428	90133A032	. WASHER FLAT, NEOPRENE, .25 ID UOC: UWP	4
12	PAFZZ	5340-01-620-0633	19207	12562504	. COVER ACCESS, MAIN DISPENSING VALVE SHAFT COVER UOC: UWP	2
13	PCFZZ	5330-01-619-8968	19207	12562508-2	. GASKET SHAFT COVER, TOP UOC: UWP	1
14	PCFZZ	5330-01-624-9265	19207	12562508-4	. GASKET SHAFT COVER, BOTTOM UOC: UWP	1
15	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD, 1/4 IN -20 X 3/4 IN , YELLOW, ZNC FINISH, SAE J429, GRADE 8 UOC: UWP	8

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
16	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	8
17	PAFZZ	5310-01-620-0650	39428	90133A032	. WASHER FLAT, NEOPRENE, .25 ID UOC: UWP	8
18	PAFZZ	5340-01-622-2451	19207	12562512	. COVER ACCESS, LID ASSEMBLY, DISCHARGE BOX UOC: UWP	1
19	PAFZZ	9390-01-622-4123	19207	12562628-1	. NONMETALLIC CHANNEL TRIM, EDGE PIECE UOC: UWP	1
20	PAFZZ	9390-01-622-4112	19207	12562628-2	. NONMETALLIC CHANNEL TRIM, INNER WALL UOC: UWP	1
21	PAFFF	2510-01-622-1334	19207	12562510	. PANEL BODY, VEHICULAR, FRONT PANEL ASSY, DISCHARGE BOX UOC: UWP	1
22	PAFZZ	5340-01-619-9972	19207	12562599	. . PANEL BLANK, DISCHARGE BOX FRONT PANEL UOC: UWP	1
23	PAFZZ	5340-01-626-5024	19207	12562575	. . PANEL BLANK, DISCHARGE HOUSING DOOR ASSY UOC: UWP	1
24	PAFZZ	5340-01-454-3443	94222	24-20-312-10	. . FASTENER PAWL, ACCESS DOOR HANDLE ASSEMBLY UOC: UWP	1
25	PAFZZ		19207	12562630	HINGE BUTT, SURFACE MOUNT, 3.50 X 3.34 UOC: UWP	1
26	PAFZZ	5305-01-572-8241	39428	97646A115	. . SCREW CAP, HEXAGON HEAD UOC: UWP	3
27	PAFZZ	5305-01-620-0665	39428	92323A516	. . SCREW CAP, HEXAGON HEAD, ZINC-PLATED STEEL, SERRATED FLANGE, 1/4 IN -20 THREAD, 3/4 IN LENGTH UOC: UWP	3
28	PAFZZ	5365-01-620-0306	4D3B0	12562509	. . SPACER PLATE, HINGE, DISCHARGE BOX UOC: UWP	1
29	PAFZZ	5310-01-533-5638	39428	98023A029	. . WASHER FLAT UOC: UWP	8
30	PAFZZ	5310-01-621-8984	39428	94945A205	. . NUT SELF-LOCKING, HEXAGON, GRADE 8 STEEL, NYLON-INSERT, ZNC-YELLOW PLTD, 1/4 IN -20 THRD SZ, 7/16 IN W, 13/64 IN H UOC: UWP	6

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
31	PAFZZ	5340-01-619-9823	19207	12562506	. COVER ACCESS, DISCHARGE BOX RIGHT PANEL UOC: UWP	1
32	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD, 1/4 IN -20 X 3/4 IN , YELLOW, ZNC FINISH, SAE J429, GRADE 8 UOC: UWP	6
33	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	12
34	PAFZZ	5310-01-621-4141	0Y3H3	1137183	. NUT SELF-LOCKING, SINGLE BALL SEAT, HEXAGON, NYLON INSERT, YELLOW, ZINC FINISH NE, GRADE 8, 1/4 IN -20 UOC: UWP	6
35	PAFZZ	5340-01-622-2014	19207	12562505	. BRACKET MOUNTING, LEFT PANEL, DISCHARGE BOX UOC: UWP	1
36	PAFZZ	5310-01-533-5638	39428	98023A029	. WASHER FLAT UOC: UWP	12
37	PAFZZ	5305-01-526-7861	39428	92620A540	. SCREW CAP, HEXAGON HEAD, 1/4 IN -20 X 3/4 IN , YELLOW, ZNC FINISH, SAE J429, GRADE 8 UOC: UWP	6
38	PAFZZ	5310-01-621-4141	0Y3H3	1137183	. NUT SELF-LOCKING, SINGLE BALL SEAT, HEXAGON, NYLON INSERT, YELLOW, ZINC FINISH NE, GRADE 8, 1/4 IN -20 UOC: UWP	6

END OF FIGURE

FIELD MAINTENANCE
FIRE EXTINGUISHER MOUNT BRACKET ASSEMBLY

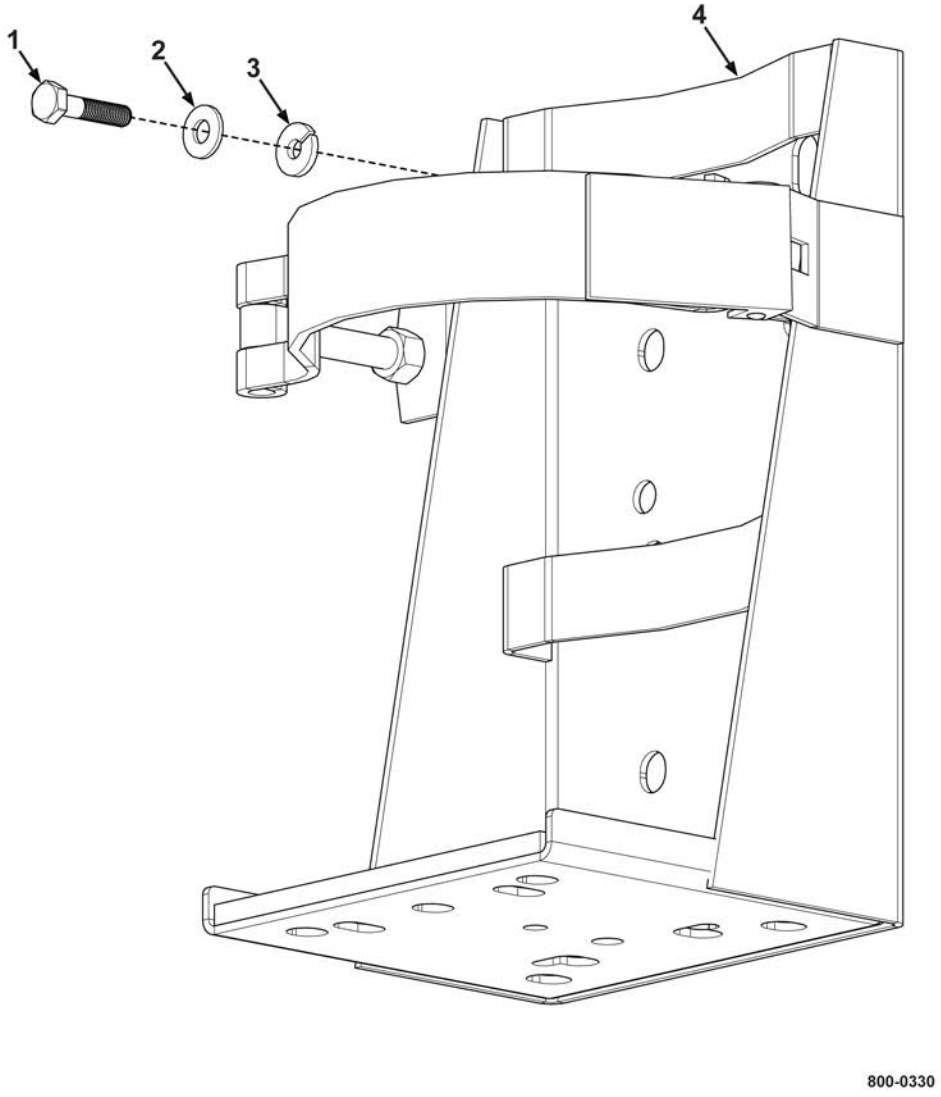


Figure 25. FIRE EXTINGUISHER MOUNT BRACKET ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0316 FIRE EXTINGUISHER MOUNT BRACKET ASSEMBLY	
					FIG. 25. FIRE EXTINGUISHER MOUNT BRACKET ASSEMBLY	
1	PAFZZ	5305-01-564-5768	0Y3H3	15003	BOLT 1/4 IN -20X3/4 IN UOC: UWP	3
2	PAFZZ	5310-01-533-5638	39428	98023A029	WASHER FLAT UOC: UWP	3
3	PAFZZ	5310-01-570-0413	07070	1133618	WASHER LOCK UOC: UWP	3
4	PFFZZ	4210-01-620-0662	19207	12562453	BRACKET FIRE EXTINGUISHER, MOUNTING, MODIFIED UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
REPAIR KITS, CLADDING PATCH

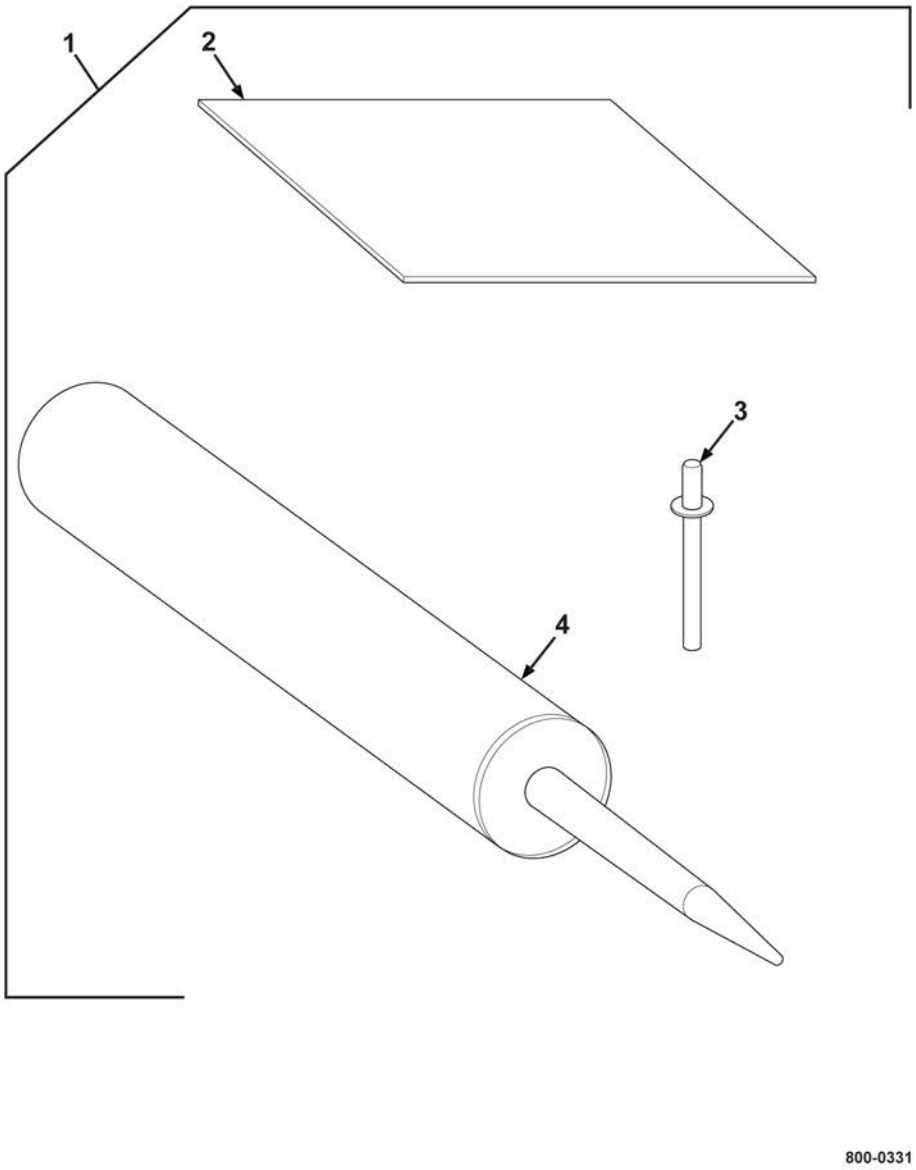


Figure 26. REPAIR KITS, CLADDING PATCH (Sheet 1 of 2)

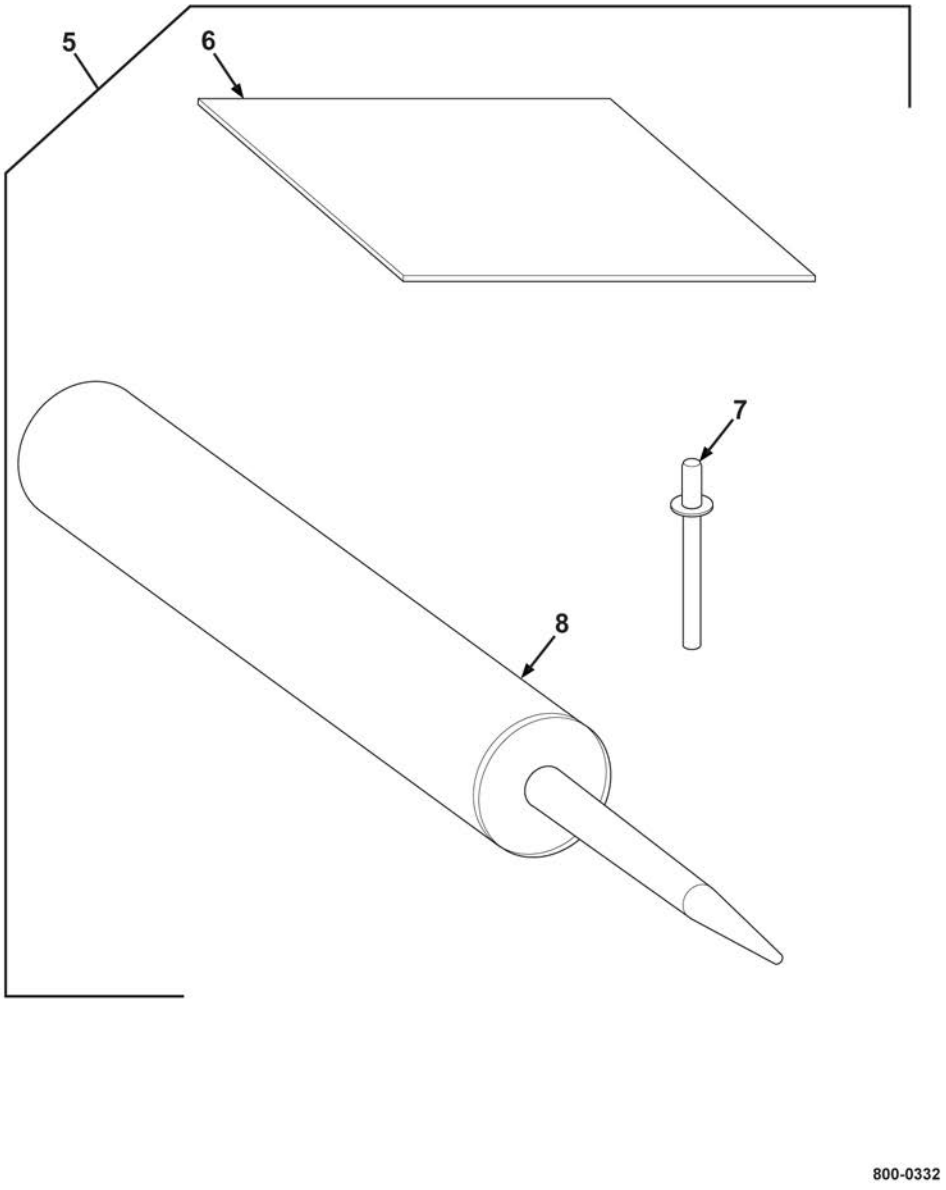


Figure 26. REPAIR KITS, CLADDING PATCH (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 REPAIR KITS, CLADDING PATCH	
					FIG. 26. REPAIR KITS, CLADDING PATCH	
1	PAFZZ	4940-01-620-4853	19207	12562470-GREEN	REPAIR KIT METAL, CLADDING PATCH, GREEN-383 UOC: UWP	1
2	KFFZZ		19207	12562470-01	. 12 IN X 12 IN PAT ALUMINUM, GREEN UOC: UWP	1
3	KFFZZ		39428	97524A030	. RIVET BLIND, SEALING, DOMED, ALUM, 1/8 IN DIA, 0.125 IN GRIP UOC: UWP	25
4	KFFZZ		7B735	221-B	. ADHESIVE 10.3 OZ CARDTRIDGE UOC: UWP	1
5	PAFZZ	4940-01-620-4841	19207	12562470-TAN	REPAIR KIT METAL, CLADDING PATCH, TAN-686A UOC: UWP	1
6	KFFZZ		19207	12562470-02	. 12 IN X 12 IN PAT ALUMINUM, TAN UOC: UWP	1
7	KFFZZ		39428	97524A030	. RIVET BLIND, SEALING, DOMED, ALUM, 1/8 IN DIA, 0.125 IN GRIP UOC: UWP	25
8	KFFZZ		7B735	221-B	. ADHESIVE 10.3 OZ CARDTRIDGE UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
HARDWARE KIT, CORROSION REPAIR

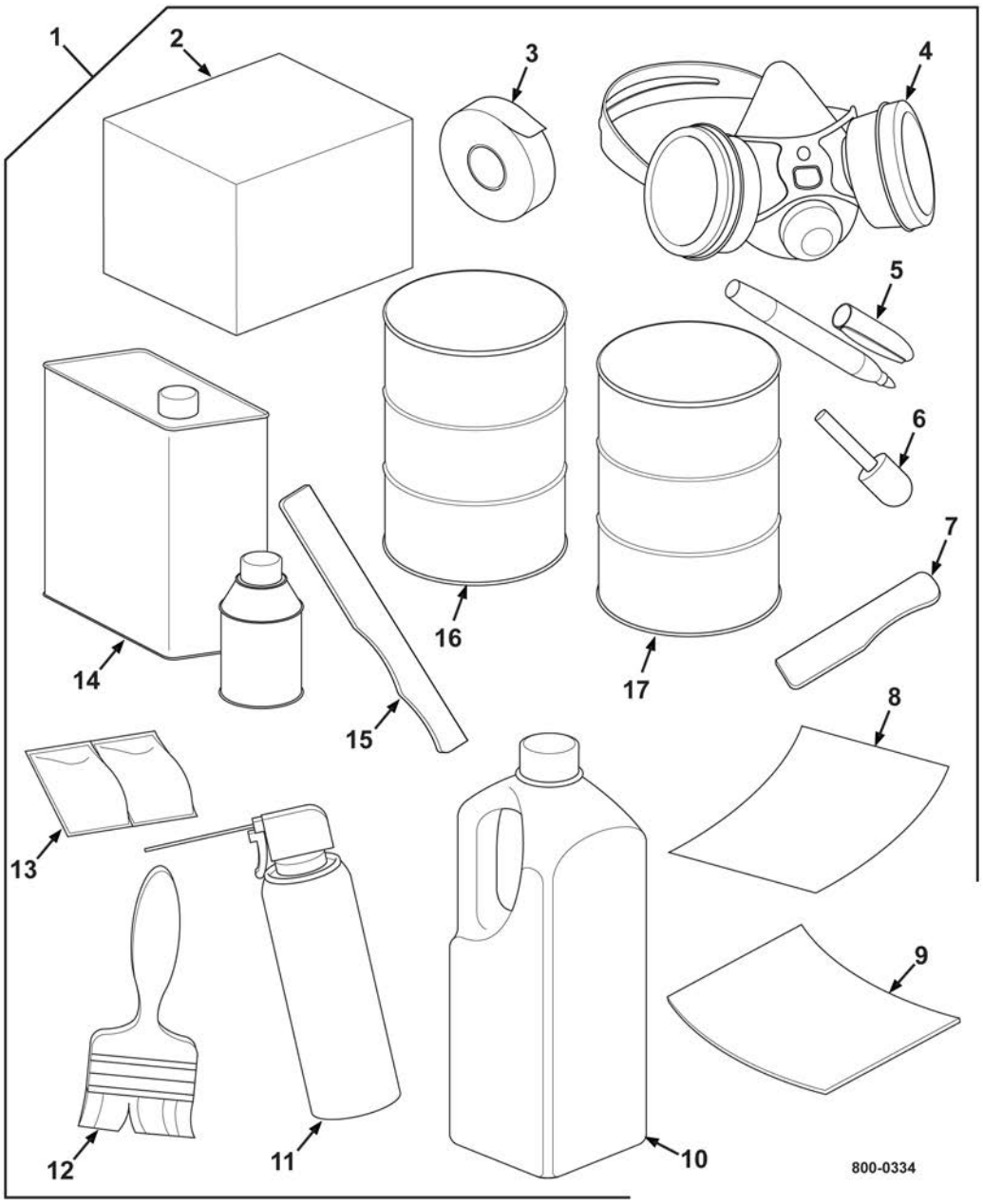


Figure 27. HARDWARE KIT, CORROSION REPAIR

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0401 HARDWARE KIT, CORROSION REPAIR	
					FIG. 27. HARDWARE KIT, CORROSION REPAIR	
1	PAFZZ	5340-01-612-1790	2X262	106A0514	HARDWARE KIT MECHANIC EQUIPMENT, CORROSION REPAIR UOC: UWP	1
2	KFFZZ		7Z049	S-4126DW	. CONTAINER 12X10X10 UOC: UWP	1
3	KFFZZ	8030-01-519-4422	0PX05	9341	. TAPE REINFORCEMENT, 16 IN LONG UOC: UWP	1
4	KFFZZ		39428	53565T2	. RESPIRATOR AIR, NIOSH UOC: UWP	1
5	KFFZZ		39428	1661T11	. MARKER SHARPIE, FINE POINT, PERMANENT UOC: UWP	1
6	KFFZZ		1T1K8	NOR 32A60-KUBE	. STONE GRINDING, WITH ARBOR, SM-2 D/C C BUR UOC: UWP	1
7	KFFZZ	1680-01-507-9185	29891	5510	. SCRAPER NONMETALLIC, SMALL SPATULA UOC: UWP	1
8	KFFZZ		39428	4673A23	. SANDPAPER 80 GRIT UOC: UWP	1
9	KFFZZ		39428	7291T812	. PAD SORBENT UOC: UWP	1
10	KFFZZ	6810-00-356-4936	80063	6Z9250	. WATER DISTILLED-DEIONIZED, 1 QT UOC: UWP	1
11	KFFZZ		39428	7437K34	. DUSTER AIR, COMPRESSION UOC: UWP	1
12	KFFZZ		39428	7754T43	. BRUSH PAINT, 3 IN TRIMMED UOC: UWP	2
13	KFFZZ		1FL31	580	. 1221 SUPER E METAL, 125 GM UOC: UWP	1
14	KFFZZ		1FL31	714	. 9111 CLEANER/DEGREASER, 1 PT UOC: UWP	1
15	KFFZZ	5120-01-519-4732	0PX05	17A	. SPATULA LARGE UOC: UWP	1
16	KFFZZ		1FL31	N55	. 5811 IMMERSION GRADE DW, GRAY UOC: UWP	1
17	KFFZZ		1FL31	N54	. 5811 IMMERSION GRADE DW, BEIGE UOC: UWP	1
					END OF FIGURE	

FIELD MAINTENANCE
BULK ITEMS LIST

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 05 BULK MATERIAL	
					FIG. BULK.	
1	PAFZZ	6145-00-152-6499	81349	M13486/1-5	WIRE ELECTRICAL, BLACK, 14 GAUGE, BULK ITEM.....	V
2	PAFZZ	6145-01-554-4054	39428	7587K971	WIRE ELECTRICAL, 14 GA, BLACK, BULK ITEM.....	V
3	PAFZZ	6145 -01-554-4066	39428	7587K95	WIRE ELECTRICAL, 14 GA, GREEN, BULK ITEM.....	V
4	PAFZZ	6145-01-554-4062	39428	7587K974	WIRE ELECTRICAL, 14 GA, WHITE, BULK ITEM.....	V
5	PAFZZ	6145-01-620-3486	39428	7587K98	WIRE 14 GA, BLUE, BULK ITEM.....	V
6	PAFZZ	6145-01-620-7134	39428	7587K061	WIRE 14 GA, BROWN, BULK ITEM.....	V
7	PAFZZ	6145 -01-623-6461	39428	7587K051	WIRE 14 GA, GREEN/YELLOW, BULK ITEM.....	V
8	PAFZZ	6145-01-626-8256	39428	7587K979	WIRE 14 GA, ORANGE, BULK ITEM.....	V
9	PAFZZ	6145 -01-623-6464	39428	7587K081	WIRE 14 GA, PURPLE, BULK ITEM.....	V
10	PAFZZ	6145-01-619-9477	39428	7587K972	WIRE 14 GA, RED, BULK ITEM.....	V
11	PAFZZ	6145-01-619-9493	39428	7587K79	WIRE 18 GA, BLUE, BULK ITEM.....	V
12	PAFZZ	6145-01-619-9515	39428	7587K078	WIRE 18 GA, PURPLE, BULK ITEM.....	V
13	PAFZZ	9330-01-622-4558	09106	HT1-4UR	TUBING SPIRAL WRAP, 1/4 IN., BULK ITEM.....	V
					END OF FIGURE	

FIELD MAINTENANCE
NATIONAL STOCK NUMBER INDEX (NSN)

STOCK NUMBER	FIG.	ITEM
-		
6210-00-151-5276	18	78
6145-00-152-6499	BULK	1
5935-00-167-7775	8	11
	8	17
	8	24
6210-00-176-4928	18	77
6810-00-356-4936	27	10
5320-00-395-6523	13	10
5935-00-462-6603	8	23
	8	31
5330-00-612-2414	4	3
	6	14
	23	6
5930-00-655-4241	18	56
5930-00-660-3952	18	55
4730-01-127-2585	6	7
5310-01-204-2167	17	27
	17	44
4010-01-225-2680	7	20
4730-01-282-1693	6	8
4730-01-282-1698	6	6
4730-01-305-8657	4	5
	6	18
5305-01-340-0423	18	46
	18	57
	18	69
	18	72
5310-01-416-1851	8	36
4730-01-420-5921	6	5
2330-01-449-1776	8	1
5305-01-451-9220	21	4
5340-01-454-3443	24	24
5340-01-458-7237	4	8
	6	15
5310-01-466-7850	19	6
5325-01-468-9368	4	10
	5	1
	6	11
	7	4
	7	15
	7	21
	23	8
5320-01-472-5234	10	23
5310-01-483-5290	21	6
5310-01-485-0790	18	51
5925-01-487-6229	18	33
4730-01-490-4191	23	4

STOCK NUMBER	FIG.	ITEM
5310-01-493-3522	17	17
5315-01-495-5228	7	7
5310-01-505-7694	17	6
	17	33
	17	36
	17	48
5310-01-506-1887	18	45
	18	58
	18	66
	18	70
	18	73
	19	9
1680-01-507-9185	27	7
5310-01-516-9784	17	14
	17	28
	17	43
5325-01-518-7045	8	5
8030-01-519-4422	27	3
5120-01-519-4732	27	15
5310-01-523-3916	13	7
5310-01-526-0459	17	3
	17	7
	17	32
	17	37
	17	47
5306-01-526-5035	6	3
5305-01-526-7861	17	11
	17	45
	24	9
	24	15
	24	32
	24	37
5320-01-533-2458	17	40
5315-01-533-4361	7	10
	7	12
5305-01-533-5464	18	65
5310-01-533-5638	10	13
	10	19
	17	12
	17	39
	18	4
	18	9
	24	3
	24	10
	24	16
	24	29
	24	33
	24	36

STOCK NUMBER	FIG.	ITEM
	25	2
5310-01-534-7832	18	50
5340-01-538-8645	13	9
5940-01-547-8605	18	38
5310-01-550-2509	10	14
	10	20
5310-01-553-0796	17	8
	17	31
	17	50
5310-01-553-3365	13	5
6145-01-554-4054	BULK	2
6145-01-554-4062	BULK	4
6145 -01-554-4066	BULK	3
5310-01-557-0742	17	4
5310-01-559-8143	12	2
	21	9
4010-01-560-2872	17	16
	17	20
4730-01-563-6542	4	11
	6	10
5305-01-564-5428	18	2
	18	7
5305-01-564-5768	24	4
	25	1
5310-01-570-0413	18	3
	24	2
	25	3
5305-01-572-8241	24	26
5340-01-577-5655	17	19
5310-01-579-6922	8	32
2330-01-580-7654	1	1
5320-01-581-6991	8	40
5315-01-582-6263	7	9
5320-01-585-3144	10	3
5320-01-585-4552	10	22
5305-01-585-9156	19	8
4010-01-587-5554	7	3
	7	14
	8	6
5310-01-590-7614	13	6
	15	8
5310-01-592-0135	18	49
5310-01-592-6904	21	7
5305-01-593-8150	17	5
	17	9
	17	30
	17	38
	17	51
5940-01-593-9518	18	44
5310-01-597-1614	11	4
5310-01-601-4292	11	3
4730-01-607-6335	4	4
4730-01-607-6336	6	19
4730-01-607-6337	6	9
5340-01-608-4435	17	41
8145-01-608-4458	8	41
5315-01-608-4662	17	22
5310-01-608-4838	17	2
4010-01-608-4893	4	9
	5	2
	6	12
	23	7
4730-01-608-4948	23	9
5340-01-608-5411	19	3
2510-01-608-5778	17	29
5340-01-608-6043	17	13
5365-01-608-8113	8	9
4730-01-609-1349	4	2
	6	13
2590-01-609-3663	17	24
5340-01-609-5924	17	10
5340-01-609-5969	8	3
2540-01-609-6884	17	34
2590-01-609-6888	17	25
2590-01-609-6890	17	23
2590-01-609-7144	17	46
2590-01-609-7217	17	35
5995-01-610-5586	2	1
4820-01-611-5301	14	1
5340-01-612-1790	27	1
6130-01-614-4683	18	37
5995-01-619-8263	3	1
5310-01-619-8705	18	8
5305-01-619-8790	18	31
5940-01-619-8810	8	18
5940-01-619-8813	18	40
5920-01-619-8819	8	28
4010-01-619-8825	7	19
5360-01-619-8914	17	21
5330-01-619-8961	18	63
5330-01-619-8968	24	13
5340-01-619-9280	18	64
5306-01-619-9332	8	34
	8	37
5340-01-619-9339	18	43
5340-01-619-9349	24	7
5340-01-619-9433	18	59
4730-01-619-9441	23	2
6145-01-619-9477	BULK	10
5940-01-619-9480	18	39
5940-01-619-9481	18	42
5940-01-619-9482	18	41
4730-01-619-9483	7	16
6145-01-619-9493	BULK	11
6145-01-619-9515	BULK	12
5940-01-619-9521	8	12

STOCK NUMBER	FIG.	ITEM
5340-01-619-9821	24	1
5340-01-619-9823	24	31
5340-01-619-9972	24	22
5340-01-619-9987	13	2
5340-01-620-0112	8	38
5310-01-620-0203	10	4
5365-01-620-0306	24	28
5340-01-620-0351	8	4
2590-01-620-0383	19	10
4730-01-620-0551	23	3
5340-01-620-0622	8	35
5340-01-620-0633	24	12
5315-01-620-0634	7	8
5306-01-620-0641	13	3
5310-01-620-0650	24	11
	24	17
4210-01-620-0662	25	4
5305-01-620-0665	24	27
4730-01-620-0726	4	7
	6	16
9390-01-620-0857	18	67
4710-01-620-0878	7	11
5975-01-620-1006	18	61
6685-01-620-1586	10	2
2540-01-620-2434	18	11
2540-01-620-2618	19	1
5340-01-620-2622	18	71
6150-01-620-2976	18	6
5340-01-620-3067	7	13
5330-01-620-3143	10	10
5330-01-620-3149	10	16
6145-01-620-3486	BULK	5
5310-01-620-3621	10	5
5315-01-620-3677	7	2
4730-01-620-4013	23	1
4710-01-620-4018	7	6
5340-01-620-4068	19	4
5340-01-620-4078	6	2
5306-01-620-4254	7	17
5340-01-620-4748	18	74
5430-01-620-4786	10	21
4940-01-620-4841	26	5
4940-01-620-4853	26	1
5340-01-620-5338	8	33
5340-01-620-5391	6	1
5410-01-620-5394	7	18
7690-01-620-5415	16	4
5340-01-620-5431	19	7
5340-01-620-5438	18	68
5340-01-620-5579	21	1
5340-01-620-6337	17	49
5310-01-620-6382	19	5
6680-01-620-6524	11	1
4730-01-620-6746	23	5
5340-01-620-6755	21	2
5340-01-620-6756	21	5
5340-01-620-7021	19	2
2590-01-620-7044	17	15
5340-01-620-7063	10	8
6145-01-620-7134	BULK	6
5305-01-620-7391	21	10
5305-01-620-7395	12	1
7690-01-620-8303	8	15
5935-01-620-8402	18	48
6150-01-620-8448	8	16
6150-01-620-8476	8	22
7690-01-620-8491	8	27
5305-01-620-8551	13	8
5306-01-620-9532	17	26
5340-01-620-9703	18	34
4710-01-620-9914	7	5
2590-01-620-9918	7	1
5975-01-621-1400	18	62
5305-01-621-2386	18	32
6220-01-621-2406	10	7
5640-01-621-2456	20	1
5935-01-621-3711	3	3
5920-01-621-4125	8	30
5340-01-621-4128	18	54
5930-01-621-4133	18	53
5310-01-621-4141	18	10
	24	34
	24	38
5310-01-621-4169	8	8
5325-01-621-4511	24	8
4720-01-621-4929	23	10
4820-01-621-5180	21	8
5935-01-621-6539	2	3
5935-01-621-6909	3	4
5935-01-621-7188	18	35
6685-01-621-7190	18	36
5945-01-621-7863	18	30
5340-01-621-7883	18	60
6145-01-621-8739	22	1
5310-01-621-8984	24	30
5340-01-622-0612	18	5
5310-01-622-1005	10	6
2510-01-622-1334	24	21
5340-01-622-1729	24	5
5995-01-622-1849	8	10
5340-01-622-2014	24	35
5340-01-622-2451	24	18
9390-01-622-4112	24	20
9390-01-622-4123	24	19
6210-01-622-4505	18	75
9330-01-622-4558	BULK	13

STOCK NUMBER	FIG.	ITEM
3040-01-622-6357	4	6
	6	17
5640-01-622-7146	24	6
5930-01-623-0636	18	52
6145 -01-623-6461	BULK	7
6145 -01-623-6464	BULK	9
4710-01-623-6972	6	4
4710-01-623-6974	4	1
6145-01-623-9196	2	2
2510-01-624-5460	10	1
5315-01-624-7674	17	42
7690-01-624-8986	16	3
7690-01-624-9021	16	1
2590-01-624-9022	17	1
5330-01-624-9265	24	14
6240-01-625-0169	18	76
5306-01-625-0261	10	12
	10	18
5305-01-625-2523	15	6
5995-01-625-5339	3	2
5340-01-625-9068	10	11
6680-01-625-9348	11	6
5330-01-625-9557	11	5
6680-01-625-9672	11	2

STOCK NUMBER	FIG.	ITEM
5310-01-626-0089	8	39
5330-01-626-0266	12	4
5975-01-626-0996	18	27
5975-01-626-0997	18	26
6625-01-626-1008	18	29
5320-01-626-1025	10	9
5340-01-626-1284	10	17
2510-01-626-2230	15	2
5975-01-626-2483	18	14
5340-01-626-2922	18	12
5340-01-626-2974	18	13
5330-01-626-4472	11	7
5330-01-626-4519	15	3
5340-01-626-5024	24	23
5365-01-626-5040	18	28
5340-01-626-5679	13	4
5305-01-626-7986	21	3
6145-01-626-8256	BULK	8
5307-01-626-8290	15	7
4730-01-627-2002	12	3
9330-01-627-2150	8	21
2540-01-627-4775	15	5
2540-01-627-4777	15	4
5999-12-393-3125	18	47

END OF WORK PACKAGE

FIELD MAINTENANCE
PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
AA59326-G6	4	3
	6	14
	23	6
AA59326/10-6-SS	4	2
	6	13
AA59326/11-6-SS	23	9
AA59566-A-A-2-020-010	23	10
AD36475-2	6	7
AES01C250A00WA6DG1	18	2
	18	7
BH57X06008-025M1	15	6
C-030-03032-4321	23	5
C04V000202-A	15	5
C04V000205-A	15	4
C04V002201	15	7
C04V600606	15	2
C04V600GSK	15	3
CA2KN40G7	18	35
CR5395-EH-ACV-110-X-FP-ELR-I	18	30
CZ4A10000	1	1
DMK	18	54
F11SRC-75	4	6
	6	17
GJN075027XH	18	8
H001145	19	6
HT 1/4UR	8	13
	8	19
	8	25
HT1-4UR	BULK	13
LC36GD2	18	78
M13486/1-5	8	20
	8	26
	BULK	1
M24243/1-D403	13	10
MDR-60-12	18	37
MIL-L-3661/47A LH89/1	18	77
MS24524-23	18	56
MS24525-21	18	55
MS27142-2	8	23
	8	31
MS27144-1	8	11
	8	17
	8	24
N54	27	17
N55	27	16
NOR 32A60-KUBE	27	6
PM2H25-C	18	62
QCDINADAPT	18	34
QCGF2015	18	33
R5A3016U	18	52
S-4126DW	27	2
SHB0N4X	18	53
TAPG8ZY14204	10	12
	10	18
Z16128CQRR	18	14
ZJFGHNG	18	13
ZJFGSSR	18	12
010200-11100006	21	2
0147963	8	8
020200-70010529	21	5
03-062-0750	7	8
06150PPIZN	18	31
07023P20	4	11
	6	10
071110-72101534	21	3
101506	23	3
106A0514	27	1
1133618	18	3
	24	2
	25	3
1133859	17	8
	17	31
	17	50
1136456	17	6
	17	33
	17	36
	17	48
1137183	18	10
	24	34
	24	38
1178A31	17	13
11A7000848	10	9
12562445	4	1
12562446	6	1
12562446-01	6	4
12562447	6	2
12562447-03	6	3
12562450	23	1
12562453	25	4
12562456-01	10	6
12562456-03	10	7
12562457	10	5
12562460	9	1
12562461	8	33

PART NUMBER	FIG.	ITEM
12562463	8	41
12562465-01	10	16
12562465-02	10	10
12562466	17	35
12562467	17	34
12562469	17	1
12562470-01	26	2
12562470-02	26	6
12562470-GREEN	26	1
12562470-TAN	26	5
12562471	17	46
12562473	17	25
12562474	17	23
12562474-03	17	29
12562475	17	24
12562476	17	41
12562483	17	10
12562485	10	17
12562486	10	11
12562487-01	10	21
12562489	10	15
12562490	10	8
12562491	17	49
12562493	8	3
12562494	8	9
12562495	8	4
12562496	8	2
12562497-001	8	38
12562497-002	8	35
12562502	24	5
12562504	24	12
12562505	24	35
12562506	24	31
12562507	18	61
12562508-2	24	13
12562508-4	24	14
12562509	24	28
12562510	24	21
12562512	24	18
12562514	24	1
12562515	21	8
12562516	21	1
12562517	18	26
12562518	18	5
12562519	24	7
12562520	18	68
12562521	18	11
12562522	18	6
12562523-1	18	71
12562523-2	18	74
12562523-3	18	59
12562525-1	16	1
12562525-2	16	3
12562525-3	16	4
12562526	2	1
12562526-01	2	2
12562527	3	1
12562527-01	3	2
12562528	10	2
12562529	18	27
12562531	11	5
12562533	7	6
12562534	7	11
12562534-01	7	18
12562534-02	7	16
12562535	7	5
12562536	7	1
12562538	17	15
12562539	13	2
12562541	13	1
12562541-1	13	4
12562542	10	1
12562554	15	1
12562574	18	29
12562575	24	23
12562577	18	28
12562585	19	2
12562585-01	19	4
12562586	19	10
12562587	19	1
12562593-001	8	10
12562593-002	8	16
12562593-003	8	22
12562594-001	8	15
12562594-002	8	21
12562594-003	8	27
12562599	24	22
12562600	18	63
12562601	18	67
12562603	8	29
12562605	18	1
12562607	19	7
12562608	11	1
12562609	11	6
12562611	11	7
12562612	22	1
12562624	11	2
12562628-1	24	19
12562628-2	24	20
12562630	24	25
130147-0077	3	3
130147-0102	2	3
130147-0104	3	4
130147-0159	18	48
1406A43	13	9
15003	24	4

PART NUMBER	FIG.	ITEM
	25	1
15512	7	19
160-0113-203	18	75
1661T11	27	5
17A	27	15
2-H-62C-175	12	1
2-H-62C-325	21	10
2002-1492	18	43
221-B	26	4
	26	8
2250	24	8
24-20-312-10	24	24
249-116	18	38
29705T29	19	3
30345T23	4	9
	5	2
	6	12
	23	7
30345T31	7	3
	7	14
	8	6
31985T71	17	19
33859	17	4
3461T84	17	16
	17	20
4464K156	6	19
4464K172	4	4
4464K175	6	9
4464K318	6	5
4464K39	4	7
	6	16
4673A23	27	8
4830K191	4	5
	6	18
4830K265	6	8
4830K269	6	6
5205-4M	4	8
	6	15
53565T2	27	4
5363K76	23	2
54225K64	23	4
5510	27	7
580	27	13
5915	16	2
6133016083-041	14	2
6133016220-041	14	1
65082	17	22
69100050	24	6
6920K51	18	44
6Z9250	27	10
701050/811-05-061	18	36
70152673	18	76
706E002-44	7	10

PART NUMBER	FIG.	ITEM
	7	12
7113K453	8	12
7113K455	8	18
714	27	14
7291T812	27	9
7437K34	27	11
7460K42	8	28
7587K051	18	25
	BULK	7
7587K061	18	23
	BULK	6
7587K078	18	15
	BULK	12
7587K081	18	22
	BULK	9
7587K79	18	16
	BULK	11
7587K95	8	14
	18	17
	BULK	3
7587K971	18	18
	BULK	2
7587K972	18	19
	BULK	10
7587K974	18	20
	BULK	4
7587K979	18	21
	BULK	8
7587K98	18	24
	BULK	5
7643A76	22	2
7754T43	27	12
82-2209	8	30
835-1365	7	13
853-020	12	3
8750340	8	1
8947T24	7	20
8C69268Z	8	39
90126A029	17	27
	17	44
90126A514	18	45
	18	58
	18	66
	18	70
	18	73
	19	9
90133A032	24	11
	24	17
90177A223	8	5
90185A550	17	26
90272A826	19	8
90272A829	18	46
	18	57

PART NUMBER	FIG.	ITEM
	18	69
	18	72
90402A150	18	32
90507A230	17	17
90905A655	4	10
	5	1
	6	11
	7	15
	7	21
	23	8
90965A210	13	7
909A655	7	4
91104A031	17	3
	17	7
	17	32
	17	37
	17	47
91306A356	18	65
91475A029	21	6
91828A420	11	3
91831A029	8	36
91841A007	18	51
91950A035	12	2
	21	9
92146A540	18	50
92153A436	11	4
92323A516	24	27
92390A162	7	9
92620A540	17	11
	17	45
	24	9
	24	15
	24	32
	24	37
92620A655	17	5
	17	9
	17	30
	17	38
	17	51
9267K35	8	7
92865A542	21	4
9332K65	20	1
9341	27	3
93548A530	8	34
	8	37
93620A028	18	64
93620A178	18	60
93635A438	13	3
93635A528	13	8
93750A330	17	42
94205A260	10	4
94205A270	13	5
94205A280	13	6
	15	8
9473T183	18	41
9473T184	18	40
9473T185	18	42
9473T193	18	47
9473T228	18	39
94895A029	10	14
	10	20
94895A815	17	2
9489T55	7	17
9489T57	17	18
94945A205	24	30
95165A038	7	7
95165A041	7	2
95505A601	21	7
9630K64	17	21
96659A102	18	49
97135A210	17	14
	17	28
	17	43
97524A026	10	23
97524A029	10	22
97524A030	26	3
	26	7
97524A032	17	40
97524A107	10	3
97524A108	8	32
97525A490	8	40
97646A115	24	26
98017A689	19	5
98023A029	10	13
	10	19
	17	12
	17	39
	18	4
	18	9
	24	3
	24	10
	24	16
	24	29
	24	33
	24	36
	25	2
98206	12	4

END OF WORK PACKAGE

CHAPTER 8

SUPPORTING INFORMATION

OPERATOR MAINTENANCE
REFERENCES

Scope

This work package lists all field manuals, forms, technical manuals and miscellaneous publications referenced in this manual.

Field Manuals

FM 4-25.11	First Aid for Soldiers
TC 21-305-20	Manual for Wheeled Vehicle Driver

Forms

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2407	Design Deficiencies
DA Form 5988-E	Equipment Inspection and Maintenance Worksheet
DD Form 1397	Processing and De-processing Record of Shipping, Storage and Issue of Vehicles and Spare Engines
SF 361	Transportation Discrepancy Report
SF 368	Product Quality Deficiency Report (PQDR)

Technical Manuals

TM 9-2330-394	M1095 Series Manuals
TM 9-2330-394-13&P	M1095 Series, 5 Ton, Medium Tactical Vehicle Trailer Manual
TM 750-244-6	Destruction Procedures

Technical Bulletins

TB 9-2300-422-20	Security of Tactical Wheeled Vehicles
TB 43-0242	CARC Spot Painting
TB 55-46-1	Standard Characteristics (Dimensions, Weight and Cube) for Transportability of Military Vehicles and Other Outsize/ Overweight Equipment (in TOE Line Item Number Sequence)

Army Regulations

AR 700-138	Army Logistics Readiness and Sustainability
AR 750-1	Army Material Maintenance Policy

Other Publications

ASME Y14.38-1999	Standard Abbreviations
CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50–909	Field and Garrison Furnishings and Equipment
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)
DA PAM 738-750 and DA PAM 738-751	Functional Users Manual for The Army Maintenance Management System (TAMMS)
DA PAM 750-8	The Army Maintenance Management System (TAMMS) User Manual
MIL-PRF-680, Type III	Degreasing Solvent
MTMCTEA Pam 55-19	Tiedown Handbook for Rail Movements
SDDCTEA Pam 55-22	Lifting and Lashing Handbook for Marine Movements

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field - includes two subcolumns, Crew (C) and Maintainer (F).
Sustainment - includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter “C” in the third position of the Source, Maintenance, and Recoverability (SMR) code. A “C” appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.
2. Maintainer maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are retumed to the user after maintenance is performed at this level.
3. Below depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are retumed to the supply system after maintenance is performed at this level.
4. Depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are retumed to the supply systems after maintenance is performed at this level.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

INTRODUCTION - Continued

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gaugings and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
    a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
    b. Repack. To return item to packing box after service and other maintenance operations.
    c. Clean. To rid the item of contamination.
    d. Touch up. To spot paint scratched or blistered surfaces.
    e. Mark. To restore obliterated identification.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Paint (ammunition only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.
10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/ installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

INTRODUCTION - Continued

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (I) Group Number. Column (I) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above).

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate sub column. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C Crew maintenance
F Maintainer maintenance

Sustainment:

L Specialized Repair Activity (SRA)
H Below depot maintenance

INTRODUCTION - Continued

D Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) - Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) - Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) - Nomenclature. Name or identification of the tool or test equipment.

Colunm (4) - National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) - Tool Number. The manufacturer's part number.

Explanation of Columns in the Remarks

Column (I) - Remarks Code. The code recorded in column (6) of the MAC.

Column (2) - Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC)

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
00	TRAILER TANK, CAMEL II	Inspect	1.0	1.0				C, E
		Service	0.7	1.0				
01	TRAILER, TANK COMPONENTS							
0101	GENERATOR SET ADAPTOR	Inspect	0.1					C
		Repair		0.3			1	B, D
0102	EXTENSION, 25 FT POWER CORD	Inspect	0.1					C
		Repair		0.8			1	B, D
0103	SINGLE POINT DISPENSING SYSTEM	Inspect	0.1					C
		Repair		0.5			1, 2	B, D
0104	LANYARD/ SPLIT RING	Inspect	0.1					C
		Replace		0.2				
0105	SIX POINT DISPENSING SYSTEM	Inspect	0.1					C
		Repair		0.6			1, 2	B, D
0106	DISPENSING STAND ASSEMBLY	Inspect	0.1					C
		Repair		0.7			1	D

Table 1. Maintenance Allocation Chart - Continued

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
02	MODIFIED, M1095 TRAILER ASSEMBLY	Inspect	0.3					C
0201	MOUNTING PIN ASSEMBLY	Inspect	0.1	0.5			6	C, G
		Replace		1.4			1	G
0202	WIRING, TRAILER GROUND	Inspect	0.1	0.1				C
		Replace		0.6			1	
0203	WIRING, CONVERTER TO FUSE LINK	Inspect	0.1	0.1				C
		Replace		0.7			1	
0204	WIRING, FUSE LINK TO ELECTRICAL JUNCTION	Inspect	0.1	0.1				C
		Replace		1.3			1	
0205	WIRING FUSE LINK	Inspect	0.1	0.1				C
		Repair		0.5			1	B, D
		Replace		0.3			1	
0206	DISCHARGE HOUSING DECK SKIRT	Inspect	1.0					C
		Replace		4.8			1, 2	
0207	STOWAGE LOCK (L) BRACKET	Inspect	0.1					C
		Replace		0.3			1	

Table 1. Maintenance Allocation Chart - Continued

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0208	STOWAGE LOCK BRACKET	Inspect	0.1					C
		Replace		0.3			1	
0209	STOWAGE BOX BOTTOM PANEL	Inspect	0.1					C
		Replace		0.4			1, 2	
03	WATER TANK ASSEMBLY	Inspect	0.2	0.4				C
		Repair		12.2			1, 2, 6	A, B, G
		Replace		1.2			1, 2, 6	A, G
0301	TANK, FRAME AND CLADDING ASSEMBLY	Inspect	0.3					C
030101	TANK INTERIOR	Inspect		0.4				C
		Repair		1.8			1, 2	
030102	CLADDING, OUTER SHELL	Repair		0.3	1.0		1, 2	B, F
030103	WATER TEMPERATURE INDICATOR AND SENSOR	Inspect	0.1					C
		Replace		6.9			1, 2	
030104	HEAT BLANKET THERMOSTAT SENSOR	Replace			4.0		1, 2	A
030105	HEATING BLANKET ASSEMBLY	Replace			4.0		1, 2	A
030106	WATER TANK MINERAL	Replace			4.0		1, 2	A

Table 1. Maintenance Allocation Chart - Continued

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	WOOL INSULATION							
030107	CLADDING, END SUPPORT RING	Replace			2.7		1, 2	
030108	CLADDING SUPPORT RIB	Replace			1.0		1, 2	A
030109	OUTER SHELL INNER SUPPORT BAND	Replace			2.0		1, 2	A
030110	OUTER SHELL CENTER STRAP ASSEMBLY	Inspect	0.1					C
		Replace		2.3			1, 2	
030111	OUTER SHELL END STRAP ASSEMBLY	Inspect	0.1					C
		Replace		1.7			1	
030112	CLADDING FRONT OUTER SHELL	Inspect	0.1					C
		Replace			6.0		1, 2	A
030113	CLADDING REAR OUTER SHELL	Inspect	0.1					C
		Replace			6.0		1, 2	A
030114	FRONT END CAP	Inspect	0.1					C
		Replace			1.7		1, 2	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
030115	REAR END CAP	Inspect	0.1					C
		Replace		6.0			1, 2, 4	
0302	WATER LEVEL INDICATOR GAUGE ASSEMBLY	Inspect	0.1					C
030201	WATER LEVEL INDICATOR GAUGE MECHANISM	Replace		1.5			1, 4	
030202	WATER LEVEL INDICATOR GAUGE ASSEMBLY	Inspect	0.1					C
		Replace		0.8			1, 4	
0303	FRONT FLANGE COVER	Inspect	0.1	0.2				C
		Replace		0.5			1, 5	
0304	SPILL BOX LID ASSEMBLY	Inspect	0.1					C
030401	SPILL BOX LOCKING ARM	Inspect	0.1					C
		Replace		0.5			1	
030402	SPILL BOX LATCH	Inspect	0.1					C
		Replace		0.5			1, 2	
030403	SPILL BOX LID	Inspect	0.1					C
		Replace		1.3			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0305	RELIEF VALVE ASSEMBLY	Inspect	0.1					C
		Replace		0.4			1	
0306	MANHOLE COVER ASSEMBLY	Inspect	0.1					C
030601	MANHOLE LATCHING BOLT	Inspect	0.1					C
		Replace		0.5			1	
030602	MANHOLE COVER	Inspect	0.1					
		Replace		0.7			1	
030603	MANHOLE COVER SEAL	Inspect	0.1					C
		Replace		0.9			1	
0307	DATA PLATE	Inspect	0.1					C
		Replace		0.2				
0308	CATWALK ASSEMBLY	Inspect	0.1					C
		Replace		2.0			1	
030801	HANDRAIL LOCKING LATCH BRACKET	Inspect	0.1					C
		Replace		0.4			1	
030802	HANDRAIL LOCKING LATCH	Inspect	0.1					C
		Replace		0.4			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
030803	CATWALK INTERMEDIATE SAFETY CABLE	Inspect	0.1					C
		Repair		1.0			1	B, D
		Replace		0.5			1	
030804	HANDRAIL TOP	Inspect	0.1					C
		Replace		1.1			1	
030805	HANDRAIL LEG	Inspect	0.1					C
		Replace		2.4			1	
030806	CATWALK LADDER	Inspect	0.1					C
		Replace		0.6			1	
030807	CATWALK SUPPORT LEG	Inspect	0.1					C
		Replace		2.4			1	
030808	HANDRAIL RETAINING PIN/LANYARD	Inspect	0.1					C
		Replace		0.5			1, 2	
030809	CATWALK KICK PLATE	Inspect	0.1					C
		Replace		0.7			1	
030810	HANDRAIL STOWAGE BRACKET	Inspect	0.1					C
		Replace		0.4			1	
030811	CATWALK PLATFORM	Inspect	0.1					C
		Replace		4.8			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0309	ELECTRICAL CONTROL BOX ASSEMBLY WITH MOUNT	Inspect	0.1	0.3			1	C
030901	ELECTRICAL CONTROL BOX MOUNT BRACKET	Inspect	0.1					C
		Replace		1.3			1	
030902	ELECTRICAL CONTROL BOX ASSEMBLY	Inspect	0.1					C
		Repair		3.1			1	B, D
		Replace		1.0			1	
0309020 1	ELECTRICAL CONTROL BOX LATCH	Inspect	0.1					C
		Replace		0.5			1	
0309020 2	ELECTRICAL CONTROL BOX LID/ HINGE	Inspect	0.1					C
		Replace		0.5			1	
0309020 3	CONDUIT, TRAILER CABLES, HEAT TRACE	Inspect	0.1					C
		Replace		1.2			1	
0309020 4	CONDUIT, OUTLET HEATER	Inspect	0.1					C
		Replace		2.5			1, 2	
0309020 5	HEAT BLANKET CURRENT SENSOR	Replace		0.7			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
03090206	HEAT TRACE CURRENT SENSOR	Replace		0.7			1	
03090207	GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER	Inspect	0.1					C
		Replace		0.8			1	
		Test	0.1					
03090208	4 POLE CONTACTOR	Inspect		0.1				C
		Replace		0.7			1	
03090209	HEAT BLANKET THERMOSTAT	Adjust		0.4			1	
		Inspect		0.1				C
		Replace		0.6			1, 2	
03090210	12 VDC POWER SUPPLY	Inspect		0.1				C
		Replace		0.6			1, 2	
03090211	TERMINAL BLOCK	Inspect		0.1				C
		Replace		0.6			1, 2	
03090212	JUMPER, TERMINAL BLOCK	Replace		0.5			1, 2	
03090213	TERMINAL GROUND LUG	Inspect		0.1				C
		Replace		0.5			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
03090214	EXTERNAL POWER PLUG	Inspect	0.1	0.1				C
		Replace		0.7			1	
03090215	MAIN POWER SWITCH	Inspect	0.1	0.1				C
		Replace		0.8			1	
03090216	HEAT BLANKET TOGGLE SWITCH	Inspect	0.1	0.1				C
		Replace		0.3			1	
03090217	HEAT TRACE TOGGLE SWITCH	Inspect	0.1	0.1				C
		Replace		0.5			1	
03090218	ELECTRICAL CONTROL BOX FRONT PANEL	Inspect	0.1	0.1				C
		Replace		0.5			1	
03090219	CIRCUIT BREAKER WINDOW MOLDING	Inspect	0.1					C
		Replace		0.5			1	
03090220	WIRE TIE, PUSH IN MOUNT	Inspect		0.1				C
		Replace		0.5			1	
03090221	ELECTRICAL CONTROL BOX REAR PANEL	Inspect		0.1				C
		Replace		6.5			1	
03090222	ELECTRICAL CONTROL	Inspect		0.1				C

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	BOX REAR PANEL DIN RAIL							
		Replace		0.6			1	
0309022 3	GROUND FAULT CIRCUIT INTERRUPTE R (GFCI) CIRCUIT BREAKER DIN RAIL	Inspect		0.1				C
		Replace		1.0			1	
0309022 4	INDICATOR LIGHT HOLDER	Inspect	0.1	0.1				C
		Replace		0.3			1	
0309022 5	INDICATOR LIGHT BULB	Inspect	0.1					C
		Replace		0.3				
0309022 6	BLACKOUT LENS	Inspect	0.1					C
		Replace		0.3				
0310	CHEMICAL STORAGE BOX ASSEMBLY	Inspect	0.1					
		Repair		0.7			1	B, D
		Replace		0.5			1	
0311	DISCHARGE BOX WOOL INSULATION	Replace		1.3			1, 2	
0312	MAIN DISPENSING VALVE ASSEMBLY	Inspect	0.1					
031201	MAIN DISPENSING	Inspect	0.1					C

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	HANDLE AND LOCK PLATE							
		Replace		0.3			1	
031202	MAIN DISPENSING VALVE	Replace		2.8			1, 5	
0313	HEAT TRACE	Replace		1.8			1, 2, 5	
0314	DISCHARGE HOSE EXTENSION ASSEMBLY	Replace		2.3			1	
		Repair		2.6			1, 2	B, D
0315	DISCHARGE BOX ASSEMBLY	Inspect	0.1					
		Repair		3.9			1	B, D
		Replace		3.2			1	
031501	DISCHARGE BOX INNER PANEL	Replace		3.5			1	
031502	DISCHARGE BOX HARD FOAM INSULATION	Replace		2.0			1	
031503	DISCHARGE BOX BOTTOM PANEL	Replace		3.4			1	
031504	MAIN DISPENSING VALVE SHAFT COVER	Inspect	0.1					C
		Replace		0.6			1	

Table 1. Maintenance Allocation Chart

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
031505	DISCHARGE BOX LID ASSEMBLY	Inspect	0.1					C
		Replace		1.1			1, 7	
031506	DISCHARGE BOX FRONT PANEL ASSEMBLY	Inspect	0.1					C
		Repair		1.5			1	
		Replace		1.3			1	
0315060 1	DISCHARGE BOX ACCESS DOOR HINGE	Inspect	0.1					C
		Replace		0.5			1	
0315060 2	DISCHARGE BOX ACCESS DOOR ASSEMBLY	Inspect	0.1					C
		Replace		0.3			1	
0315060 3	DISCHARGE BOX ACCESS DOOR HANDLE ASSEMBLY	Inspect	0.1					C
		Replace		0.3			1	
031507	DISCHARGE BOX SIDE PANEL	Inspect	0.1					C
		Replace		3.9			1	
0316	FIRE EXTINGUISH ER MOUNT BRACKET ASSEMBLY	Adjust	0.1					
		Inspect	0.1					C
		Replace		0.3			1	

Table 2. Tools and Test Equipment

TOOLS OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	TOOL KIT, GENERAL MECHANIC	5180-01-548-7634	PD484 (19200)
2	F	SHOP EQUIP AUTO VEH, TOOL SET, SATS, BASE	4910-01-490-6453	SC 4910-95-A81 (59678)
3	F	MULTI-METER	5180-01-548-7634	77-4BN (08292)
4	F	WRENCH, TORQUE, CLICK, RATCHETING, 3/8 IN. DRIVE, 75 LB-FT	4910-01-490-6453	KTC S0989 (00NS2)
5	F	WRENCH, TORQUE, CLICK, RATCHETING, 1/2 IN. DRIVE, 250 LB-FT	4910-01-490-6453	KTC S0991 (00NS2)
6	F	WRENCH, TORQUE, CLICK, RATCHETING, 3/4 IN. DRIVE, 600 LB-FT	4910-01-490-6453	KTC S0988 (00NS2)
7	F	WRENCH, TORQUE, CLICK, RATCHETING, 1/4 IN. DRIVE, 30 LB-IN.	4910-01-490-6453	KTC S0986 (00NS2)

Table 3. Remarks Code

REMARK CODE	REMARKS
A	Use forklift or suitable lifting device, 2500 pounds capacity.
B	Refer to Troubleshooting procedures.
C	Refer to Preventative Maintenance Checks and Service (PMCS).
D	Repair by replacing defective components.
E	Refer to TM 9-2330-394-13&P, for M1095 Series, 5 Ton Medium Tactical Vehicle Trailer (MTVT) procedures not covered in TM 10-2330-402-13&P (Camel II).
F	Use cladding patch repair kit.
G	AAL-Socket, Socket Wrench, 3-½ in. x¾ in. Drive.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

Scope

This work package lists Components of End Item (COEI) and Basic Issue Items (BII) for the Camel II to help you inventory items for safe and efficient operation of the equipment.

General

The COEI and BII information is divided into the following lists:

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the Camel II. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items

Basic Issue Items (BII). These essential items are required to place the Camel II in operation, operate it and to do emergency repairs. Although shipped separately packaged, BII must be with the Camel II during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the Table of Organization and Equipment/Modified Table of Organization and Equipment (TOE/MTOE). Illustrations are furnished to help you find and identify the items.

Explanation of Columns

Column (1) Item Number. Gives you the reference number of the item listed.

Column (2) National Stock Number (NSN) and Illustration. Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Code	Used on
UWP	Model Camel II 800

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required.

Table 1. There are no COEI items identified for the Camel II

(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN)	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR

Table 2. Basic Issue Items

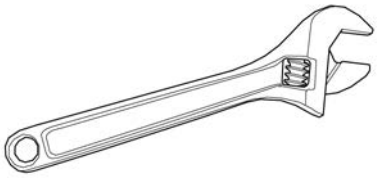
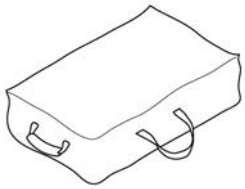
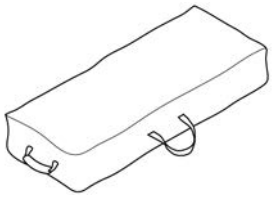
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
1	5120-01-535-9280 	Adjustable Wrench 10 in. (located in 25 in. stowage bag) 5385A14 (39428)		EA	1
2	8105-01-623-6840	Bag, BII Storage, Drawstring (located in 25 in. stowage bag) 12562459-04 (19207)		EA	2
3	8145-01-608-4450 	Bag, Storage 25 in. 12562464-01 (19207)		EA	1
4	8145-01-608-4454 	Bag, Storage 45 in. 12562464-02 (19207)		EA	1

Table 2. Basic Issue Items - Continued

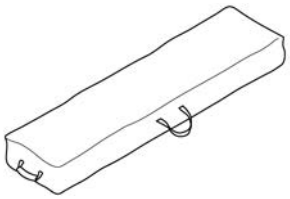
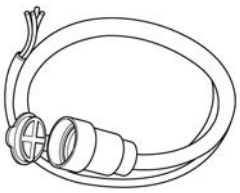
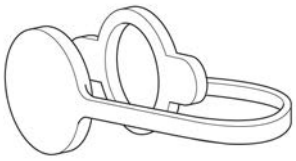
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
5	8465-01-623-7109 	Bag, Storage 70 in. 12562464-03 (19207)		EA	1
6	5340-01-620-4133	Bracket, Dispensing Support Trailer Mount (located in 45 in. stowage bag) 12562537 (19207)		EA	1
7	5995-01-610-5586 	Cable, Gen-Set Adaptor (located in 25 in. stowage bag) 12562526 (19207)		EA	1
8	5340-01-458-7237 	Cap, Protective, Dust and Moisture Seal (part of dispensing system) 5205-4M (97111)		EA	7

Table 2. Basic Issue Items - Continued

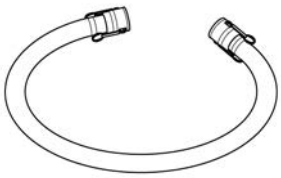
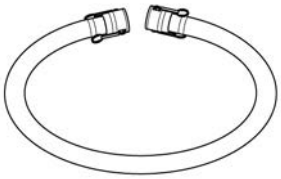
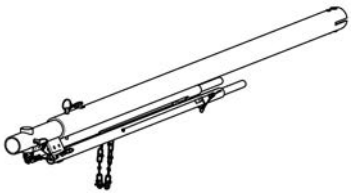
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
9	5330-00-612-2414	Circular Gasket (part of dispensing assembly) AA59326-G6 (58536)		EA	2
10	4720-01-625-4683 	Dispensing Hose Assembly, 46 in. (located in 70 in. stowage bag) 12562448-1 (19207)		EA	1
11	4720-01-625-4762 	Dispensing Hose Assembly, 66 in. (located in 70 in. stowage bag) 12562448-2 (19207)		EA	1
12	2590-01-620-9918 	Dispensing Stand Assembly (located in 70 in. stowage bag) 12562536 (19207)		EA	1

Table 2. Basic Issue Items - Continued

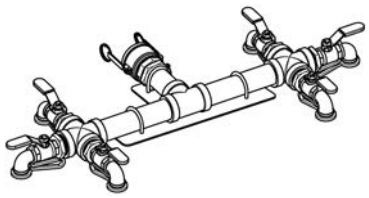
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
13	4710-01-623-6974	Dispensing System, Single Point (located in 25 in. stowage bag) 12562445 (19207)		EA	1
14	5340-01-620-5391 	Dispensing System w/mount Plate, Six Point (located in 45 in. stowage bag) 12562446 (19207)		EA	1
15	5340-01-307-4395	Dust Cap, Rubber, 3/8 in. (part of 30 in. Extension Hose Assembly) H3-66M (97111)		EA	3
16	5340-01-381-6482	Dust Cap, Rubber, 1/2 in. (part of 30 in. Extension Hose Assembly) H4-66M (97111)		EA	3

Table 2. Basic Issue Items - Continued

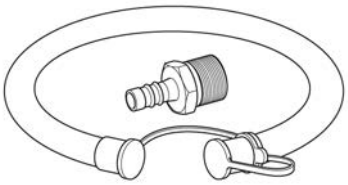
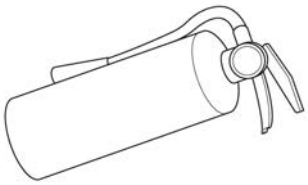
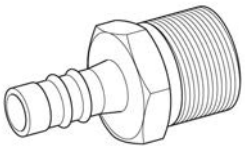
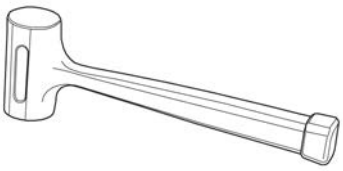
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
17	4720-01-620-6892 	Extension Hose Assembly, 30 in. (located in 25 in. stowage bag) 12562589 (19207)		EA	3
18	4210-01-438-3933 	Fire Extinguisher 466204 (0J0S5)		EA	1
19	4730-01-622-5812 	Fitting Hose, Barbed, 3/4 in. NPT (part of 30 in. Extension Hose Assembly) 5361K43 (39428)		EA	3
20	5120-01-607-1407 	Hammer, Dead Blow (located in 25 in. stowage bag) 5969A17 (39428)		EA	1

Table 2. Basic Issue Items - Continued

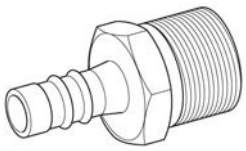
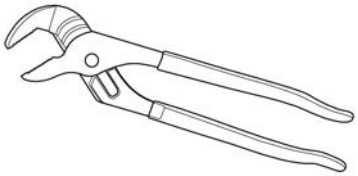
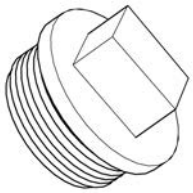
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
21	4730-01-622-5812 	Hose Fitting, 3/4 in. Dispensing x2 (located in 25 in. stowage bag) 5361K43 (39428)		EA	3
22	5331-01-621-4569	O-Ring,1-11/16 in. O.D., 1/8 in. W (part of plugs, vent, air transport) 9561K57 (39428)		EA	3
23	5120-00-278-0351 	Plier, Slip Joint (located in 25 in. stowage bag) 5637A6 (39428)		EA	1
24	4730-01-623-6813 	Plug, Vent, Air Transport (located in 25 in. stowage bag) 1256449 (19207)		EA	3

Table 2. Basic Issue Items - Continued

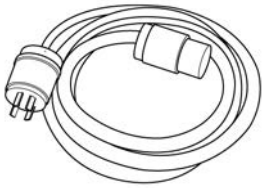
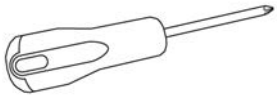
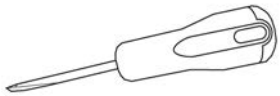
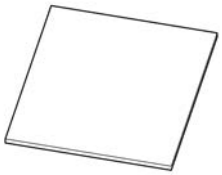
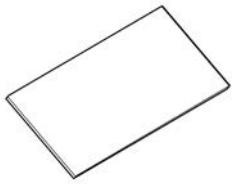
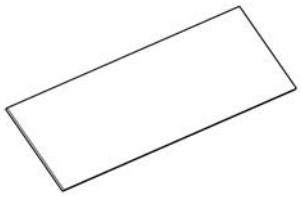
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
25	5995-01-619-8263 	Power Cord, 25 foot (located in 25 in. stowage bag) 12562527 (19207)		EA	1
26	5120-01-620-0599 	Screwdriver, Cross Tip (located in 25 in. stowage bag) 7127A37 (39428)		EA	1
27	5120-01-620-0785 	Screwdriver, Flat Tip (located in 25 in. stowage bag) 7127A21 (39428)		EA	1
28	5340-01-619-9451 	Storage Bag, Bottom, 25 in. (part of Bag, Storage 25 in.) 12562458-01 (19207)		EA	1

Table 2. Basic Issue Items - Continued

(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
29	8465-01-620-4562 	Storage Bag, Bottom, 45 in. (part of Bag, Storage 45 in.) 12562458-02 (19207)		EA	1
30	8465-01-619-9464 	Storage Bag, Bottom, 70 in. (part of Bag, Storage 70 in.) 12562458-03 (19207)		EA	1
31		Technical Manual TM 10-2330-402-13&P (located in curbside trailer front stowage box)		EA	1
32	4720-01-620-6928	Tubing Clear, Sanitary, PVC (part of 30 in. Extension Hose Assembly) 12562589-01 (19207)		EA	3

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

Scope

This work package lists additional items that you are authorized for the support of the Camel II.

General

This list identifies items that do not have to accompany the Camel II and that do not have to be turned in with it. These items are all authorized to you by Common Tables of Allowance (CTA), Modification Table of Organization and Equipment (MTOE), Tables of Distribution and Allowances (TDA) or Joint Table of Allowance (JTA).

Explanations of Columns in the AAL

Column (1) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (2) - Description, Part Number/Commercial and Government Entity Code (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the CAGEC (in parentheses).

Column (3) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Code	Used on
UWP	Model Camel II 800

Column (4) - Unit of Issue (U/I). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1).

Column (5) - QTY Recm. Indicates the quantity recommended.

Table 1. Additional Authorized List Items

(1) NATIONAL STOCK NUMBER (NSN)	(2) DESCRIPTION, PART NUMBER/ (CAGEC)	(3) USABLE ON CODE	(4) U/I	(5) QTY RECM
5340-01-346-4611	Padlock ASTM F883 (81346)		EA	3
5130-01-400-0283	Socket, Socket Wrench, 3-½ in. Long, 1-½ in. x¾ in. Drive 1ACPO (25795)		EA	1

END OF WORK PACKAGE

FIELD MAINTENANCE
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Camel II trailers. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanations of Columns in the Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., “Use brake fluid (WP 0098, Item 5)).”

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item: C=Crew.

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/(CAGEC)	(5) U/I
1	F	5999-01-586-5051	2 in. Aluminum Tape Shielding, Electrical 7631A32 (39428)	RO
2	F	8040-00-156-8057	Adhesive, 221B, (OPMNO)	TU
3	C	6810-00-255-0471	Calcium Hypochlorite, Technical, INDUCLOR+/6 oz Bottle (BT), (47695)	BT
		6810-00-242-4770	Calcium Hypochlorite, Technical, 3.75 lb Bottle, 803-7507, (09647)	BT
		6810-00-255-0472	Calcium Hypochlorite, Technical, O-C-114, 100 lb Drum, (53084)	DR
4	C	6850-01-474-2318	Cleaning Compound, Solvent, Type III,1 gal. Can, MIL-PRF-680, Type III, (81349)	CN
		6850-01-474-2320	Cleaning Compound, Solvent, Type III, 5 gal. Can, MIL-PRF-680, Type III, (81349)	CN

Table 1. Expendable and Durable Items List - Continued.

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/(CAGEC)	(5) U/I
		6850-01-474-2321	Cleaning Compound, Solvent, Type III, 55 gal. Drum, MIL-PRF-680, Type III, (81349)	DR
5	C	7920-01-612-2136	Cleaning Kit, Supplies and Equipment, 106A0515 (2X262)	KT
6	C	8030-00-062-6950	Corrosion Preventive Compound, MIL-C-16173, (81349)	QT
7	F	5970-01-623-7121	Heat Shrink Tubing, 1/8 in. Dia, 7856K631	RO
8	F	5970-01-623-4564	Heat Shrink Tubing, 3/16 in. Dia, 7496K31 (39428)	RO
9	F	5970-01-100-4464	Insulating Compound, Electrical, RTV-102WHITE, (08800)	TU
10	C	9150-00-189-6727	Oil: Lubricating, OE/HDO, 1 qt Can, MIL-PRF-2104, (81349)	CN
		9150-00-186-6668	Oil: Lubricating, OE/HDO, 5 gal. Can, MIL-PRF-2104, (81349)	CN
		9150-00-191-2772	Oil: Lubricating, OE/HDO, 55 gal. Drum, MIL-PRF-2104, (81349)	DR
11	C	7920-00-205-1711	Rag, Wiping, 50 lb Bale 7920-00-205-1711 (64067)	EA
12	F	8030-01-516-0406	Sealing Compound 10 mL 91458A14 (39428)	BT
		8030-01-014-5869	Sealing Compound 50 mL GA100FB2 (26916)	BT
13	C	6810-00-598-7316	Sodium Hypochlorite 5 gal. Bottle (80244)	BT
14	F	8030-01-545-6982	Tape Thread Sealant MS-STR-8 (3T9T9)	RO
15	F	5940-01-623-8834	Terminal, Butt Splice, Non-Insulated, 22-18 AWG 7227K32 (39428)	EA
16	F	5940-01-623-7325	Terminal, Quick Disconnect, Female, Non-Insulated 16-14 AWG, .110x.020 TAB 69525K14 (39428)	EA
17	F	5940-01-623-7317	Terminal, Quick Disconnect, Female, Non-Insulated 22-18 AWG, .25x.032 TAB 69525K13 (39428)	EA
18	F	5940-01-623-6783	Terminal, Quick Disconnect, Female, Non-Insulated 22-18 AWG, .110x.020 TAB 69525K11 (39428)	EA
19	F	5940-01-595-9399	Terminal, Ring Tongue, Non-Insulated, Brazed Seam, 16-14 AWG, STR CU Stud Size 6, 7113K341 (39428)	EA
20	F	5940-01-623-7398	Terminal, Ring Tongue, Non-Insulated, Brazed Seam, 22-18 AWG, STR CU Stud Size 6, 7113K111 (39428)	EA

Table 1. Expendable and Durable Items List - Continued.

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/(CAGEC)	(5) U/I
21	F	5940-01-623-7367	Terminal, Tab Adaptor, 2 Male/1 Female, Plated, .25x.032 TAB 8019K98 (39428)	EA
22	F	8030-01-591-8815	Tube, 3 oz, Clear Sealant 7587A37 (39428)	TU
23	C	8950-01-079-3978	Vinegar, 1 qt, Distilled 1300000854 (63298)	BT
24	F	5975-01-513-4089	Wire Tie, Black, 4.12 in.x.095 in. W, 18 lb TENSILE, 7130K52 (39428)	PK

END OF WORK PACKAGE

FIELD MAINTENANCE
TOOL IDENTIFICATION LIST

INTRODUCTION

Scope

This work package lists common tools and supplements and special tools/fixtures and test equipment needed to maintain the Camel II trailers.

Explanation of Columns in the Tool Identification List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Extractor (WP 0090, item 32)).

Column (2) Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gage, belt tension).

Column (3) National Stock Number (NSN). This is the National Stock Number assigned to the item; use it to requisition the item.

Column (4) Part Number/(CAGEC). Indicates the primary number used by the manufacturer (individual, company, firm, corporation or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGE) is also included.

Column (5) Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

Table 1. Camel II Tool Identification List.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
1	Bar, Extension, ¾ in. DR, 6.5 in.- 7.5 in. Length	4910-01-490-6453	KTC S0962 (00NS2)	SATS CL 4910-95-A81
2	Crimping Tool, Terminal	4910-01-490-6453	KTC S0159 (00NS2)	SATS CL 4910-95-A81
3	Drill, Electric, Portable, 3/8 in.	4910-01-490-6453	KTC S0191 (00NS2)	SATS CL 4910-95-A81
4	Drill, Pneumatic, Right Angle 3/8 in.	4910-01-490-6453	KTC S0193 (00NS2)	SATS CL 4910-95-A81
5	Drill Set, Twist. Shall contain 1-12 each, from 1/16 in. To 1/2 in.	4910-01-490-6453	KTC S0194 (00NS2)	SATS CL 4910-95-A81
6	Glove, Rubber, Industrial	4910-01-490-6453	KTC S0208 (00NS2)	SATS CL 4910-95-A81

Table 1. Camel II Tool Identification List - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
7	Goggle, Industrial	4910-01-490-6453	KTC S0209 (00NS2)	SATS CL 4910-95-A81
8	Handle, Sliding-T, ¾ in. Drive	4910-01-490-6453	KTC S0375 (00NS2)	SATS CL 4910-95-A81
9	Multi-meter	5180-01-548-7634	77-4BN (08292)	GMTK CL 5180-95-B48
10	Screwdriver Set, Jeweler's	4910-01-490-6453	KTC S0316 (00NS2)	SATS CL 4910-95-A81
11	Tool Kit, Blind, Fastener, Installation	4910-01-490-6453	KTC S0700 (00NS2)	SATS CL 4910-95-A81
12	Tool Kit, General Mechanic's	5180-01-548-7634	PD484 (19200)	CL 5180-95-048
13	Vise, Machinist's 4 in.	4910-01-490-6453	KTC S0725 (00NS2)	SATS CL 4910-95-A81
14	Wrench, Adjustable 18 in.	4910-01-490-6453	KTC S0980 (00NS2)	SATS CL 4910-95-A81
15	Wrench, Pipe 10 in.	4910-01-490-6453	KTC S0984 (00NS2)	SATS CL 4910-95-A81
16	Wrench, Pipe 18 in.	4910-01-490-6453	KTC S0983 (00NS2)	SATS CL 4910-95-A81
17	Wrench, Torque, Click, Ratcheting, 1/4 in. Drive, 30 lb-in.	4910-01-490-6453	KTC S0986 (00NS2)	SATS CL 4910-95-A81
18	Wrench, Torque, Click, Ratcheting, 3/8 in. Drive, 75 lb-ft	4910-01-490-6453	KTC S0989 (00NS2)	SATS CL 4910-95-A81
19	Wrench, Torque, Click, Ratcheting, ½ in. Drive, 250 lb-ft	4910-01-490-6453	KTC S0991 (00NS2)	SATS CL 4910-95-A81
20	Wrench, Torque, Click, Ratcheting, ¾ in. Drive, 600 lb-ft	4910-01-490-6453	KTC S0988 (00NS2)	SATS CL 4910-95-A81

END OF WORK PACKAGE

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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM Number	*DD MMMM YYYY*	*TM Title*

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)
	0007-3					*Figure 2, Item 9 should show a lockwasher. Currently shows a flat washer.*
	0018-2					*Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be change to (12).*

SAMPLE

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

SAMPLE

PART III – REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

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	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

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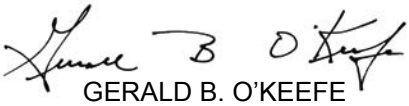
TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

By Order of the Secretary of the Army:

RAYMOND T. ODIERNO
General, United States Army
Chief of Staff

Official:



GERALD B. O'KEEFE
Administrative Assistant to the
Secretary of the Army

1417012

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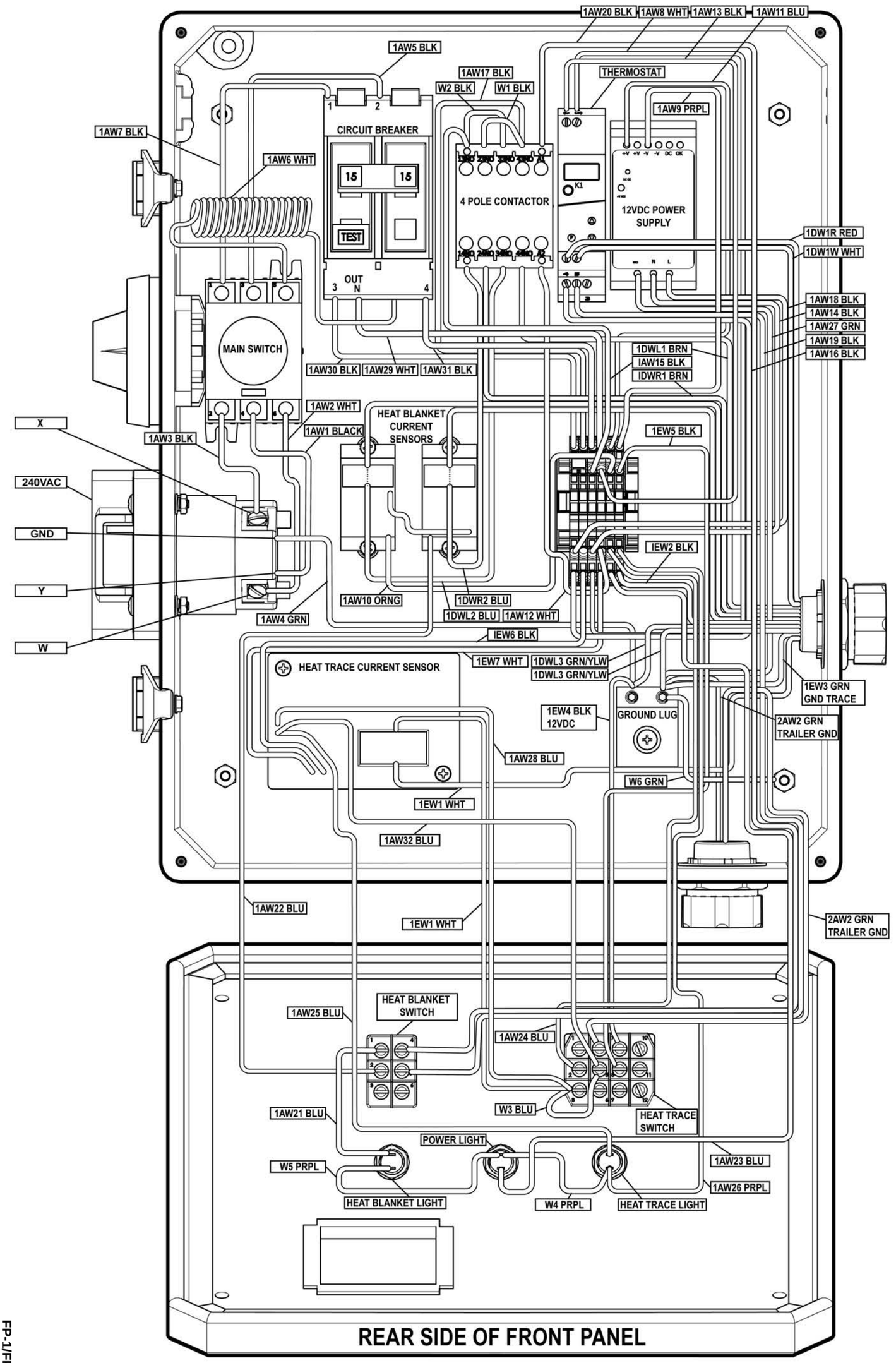

FO-1. Electrical Wiring Diagram.

12562522 - ELECTRICAL WIRE LIST

WIRE RUNS

WIRE P/N	WIRE LABEL P/N:	WIRE LABEL	COLOR	AWG	FROM	NOTE	TO	NOTE	FUNCTION ROUTING REMARKS	APPROX LENGTH (IN.)
12562522-01	12562511-01	1AW1	RED	14	1AJ1-Y	L14-30Y	1AS1-4	MAIN SWITCH	120VAC	7.00
12562522-02	12562511-02	1AW2	WHITE	14	1AJ1-W	L14-30W	1AS1-6	MAIN SWITCH	NEUTRAL	7.00
12562522-03	12562511-03	1AW3	BLACK	14	1AJ1-X	L14-30X	1AS1-2	MAIN SWITCH	120VAC	7.00
12562522-04	12562511-04	1AW4	GREEN	14	1AJ1-G	L14-30G	GT1	PANEL GND	GND	29.50
12562522-05	12562511-05	1AW5	BLACK	14	1AS1-3	MAIN SWITCH	1BCB1-2	BREAKER	120VAC	8.00
12562522-06	12562511-06	1AW6	WHITE	14	1AS1-5	MAIN SWITCH	1BCB1-N (IN)	BREAKER	NEUTRAL	N/A
12562522-07	12562511-07	1AW7	BLACK	14	1AS1-1	MAIN SWITCH	1BCB1-1	BREAKER	120VAC	8.00
12562522-08	12562511-08	1AW8	BLACK	14	1BTB2-4	L2 120VAC TERMINAL BLOCK	1BS1-L1	TEMP CONTROL (L1)	120VAC	21.00
12562522-09	12562511-09	1AW9	PUPRPLE	14	1BTB5-1	-12 VDC TERMINAL BLOCK	1BPS1-(-V)	DC POWER SUPPLY	-12VDC	17.00
12562522-10	12562511-10	1AW10	ORANGE	14	1BCS2-OR	HEAT CURRENT SENSOR	1BTB4-2	+12 VDC TERMINAL BLOCK	+12VDC	14.00
12562522-11	12562511-11	1AW11	BLUE	14	1BTB4-1	+12 VDC TERMINAL BLOCK	1BPS1-(+V)	DC POWER SUPPLY	+12VDC	18.00
12562522-12	12562511-12	1AW12	WHITE	14	1BTB3-3	NEUTRAL TERMINAL BLOCK	1BK1-A2	CONTACTOR	NEUTRAL	13.00
12562522-13	12562511-13	1AW13	WHITE	14	1BTB3-2	NEUTRAL TERMINAL BLOCK	1BS1-N	TEMP CONTROL (N)	NEUTRAL	18.25
12562522-14	12562511-14	1AW14	BLACK	14	1BTB2-3	L2 120VAC TERMINAL BLOCK	1BPS1-N	DC PWR SUPPLY	120VAC	13.50
12562522-15	12562511-15	1AW15	BLACK	14	1BTB2-2	L2 120VAC TERMINAL BLOCK	1BK1-13	CONTACTOR	120VAC	16.00
12562522-16	12562511-16	1AW16	BLACK	14	1BTB1A-4	L1 120VAC TERMINAL BLOCK	1BS1-1	TEMP CONTROL (COM)	120VAC	11.25
12562522-17	12562511-17	1AW17	BLACK	14	1BTB1B-1	L1 120VAC TERMINAL BLOCK	1BK1-43	CONTACTOR	120VAC	17.00
12562522-18	12562511-18	1AW18	BLACK	14	1BTB1A-3	L1 120VAC TERMINAL BLOCK	1BPS1-L	DC PWR SUPPLY	120VAC	14.00
12562522-19	12562511-19	1AW19	BLACK	14	1BS1-2	TEMP CONTROL (NO)	1CS2-5	SWITCH-BLANKETS	120VAC	37.00
12562522-20	12562511-20	1AW20	BLACK	14	1CS2-4	SWITCH-BLANKETS	1BK1-A1	CONTACTOR	120VAC	45.00
12562522-21	12562511-21	1AW21	BLUE	18	1CS2-1	SWITCH-BLANKETS	1CIL2A-1	AMBER LAMP HTR	+12VDC	11.00
12562522-22	12562511-22	1AW22	BLUE	18	1CS2-2	SWITCH-BLANKETS	1BCS1-BK	HEAT CURRENT SENSOR	+12VDC	33.00
12562522-23	12562511-23	1AW23	BLUE	18	1BTB4-4	+12 VDC TERMINAL BLOCK	1CIL1G-1	GREEN LAMP PWR	+12VDC	30.00
12562522-24	12562511-24	1AW24	BLUE	18	1BTB4-3	+12 VDC TERMINAL BLOCK	1CS1-2	SWITCH-TRACE	+12VDC	29.00
12562522-25	12562511-25	1AW25	BLUE	18	1BCS3-NO	TRACE DC CURRENT SENSOR	1CIL3A-1	AMBER LAMP TRACE	+12VDC	32.25
12562522-26	12562511-26	1AW26	PURPLE	18	1BTB5-3	-12 VDC TERMINAL BLOCK	1CIL3A-2	AMBER LAMP TRACE	-12VDC	27.25
12562522-27	12562511-27	1AW27	GREEN	14	GT1	GND	1BPS1-G	PWR SUP GND	GND	17.00
12562522-28	12562511-28	1AW28	BLUE	18	1CS1-3	SWITCH-TRACE	1BCS3-COM	TRACE DC CURRENT SENSOR	+12VDC	35.50
12562522-29	12562511-29	1AW29	WHITE	14	1BTB3-1	NEUTRAL TERMINAL BLOCK	1BCB1-N	CIRCUIT BREAKER	NEUTRAL	14.50
12562522-30	12562511-30	1AW30	BLACK	14	1BTB1A-1	L1 120VAC TERMINAL BLOCK	1BCB1-3	CIRCUIT BREAKER	120VAC	15.00
12562522-31	12562511-31	1AW31	BLACK	14	1BTB2-1	L2 120VAC TERMINAL BLOCK	1BCB1-4	CIRCUIT BREAKER	120VAC	13.50
12562522-32	12562511-32	1AW32	BLUE	18	1CS1-5	SWITCH-TRACE	1BCS3-NO	TRACE DC CURRENT SENSOR	+12VDC	38.25
12562522-33	12562511-33	1DWL1	BROWN	20	1DHR1-BR	LEFT HEAT BLANKET	1BK1-44	CONTACTOR	120VAC	34.00
12562522-34	12562511-34	1DWL2	BLUE	20	1DHR1-BL	LEFT HEAT BLANKET	1BK1-34	CONTACTOR	120VAC	34.00
12562522-35	12562511-35	1DWL3	GR/YREL	20	1DHR1-GY	LEFT HEAT BLANKET	GT1	GND	GND	24.00
12562522-36	12562511-36	1DWR1	BROWN	20	1DHR2-BR	RIGHT HEAT BLANKET	1BK1-24	CONTACTOR	120VAC	34.00
12562522-37	12562511-37	1DWR2	BLUE	20	1DHR2-BL	RIGHT HEAT BLANKET	1BK1-14	CONTACTOR	120VAC	34.00
12562522-38	12562511-38	1DWR3	GR/YEL	20	1DHR2-GY	RIGHT HEAT BLANKET	GT1	GND	GND	24.00
12562522-39	12562511-39	1DW1R	RED	24*	1DTC-R	BLANKET SENSOR	1BS1-5	TEMP CONTROL	SIGNAL +	36.00
12562522-40	12562511-40	1DW1W	WHITE	24*	1DTC-W	BLANKET SENSOR	1BS1-4	TEMP CONTROL	SIGNAL -	36.00
12562522-41	12562511-41	1EW1	WHITE	14	1EHR-1	HEAT TRACE (+12V)	1CS1-3	SWITCH-TRACE	+12VDC	60.00
12562522-42	12562511-42	1EW2	BLACK	14	1EHR-2	HEAT TRACE(- 12V)	1BTB5-4	-12 VDC TERMINAL BLOCK	-12VDC	40.00
12562522-43	12562511-43	1EW3	GRN	14	1EHR-3	HEAT TRACE GND	GT1	GND	GND	40.00
12562522-44	12562511-44	1EW4	BLACK	14	1CS1-7	SWITCH-TRACE	GT1	GND	-12VDC	27.25
12562522-45	12562511-45	1EW5	BLACK	14	1BTB5-2	-12 VDC TERMINAL BLOCK	1CS1-8	SWITCH-TRACE	-12VDC	27.00
12562522-46	12562511-46	1EW6	BLACK	14	1BTB1B-4	L1 120VAC TERMINAL BLOCK	1BCS3-(+)	TRACE DC CURRENT SENSOR	120VAC	14.00
12562522-47	12562511-47	1EW7	WHITE	14	1BTB3-4	NEUTRAL TERMINAL BLOCK	1BCS3-(-)	TRACE DC CURRENT SENSOR	NEUTRAL	14.25
12562522-48	12562511-48	2AW1	BLACK	14	2ATL204	TRAILER DC PWR	1CS1-4	SWITCH-TRACE	+12VDC	41.00
12562522-49	12562511-49	2AW2	GREEN	14	GT1	GND	GT2	TRAILER GND	-12VDC(GND)	28.00
12562522-50	12562511-50	W1	BLACK	14	1BK1-23	CONTACTOR	1BK1-43	CONTACTOR	120VAC	2.00
12562522-51	12562511-51	W2	BLACK	14	1BK1-13	CONTACTOR	1BK1-33	CONTACTOR	120VAC	2.00
12562522-52	12562511-52	W3	BLUE	18	1CS1-3	SWITCH-TRACE	1CS1-5	SWITCH-TRACE	+12VDC	3.00
12562522-53	12562511-53	W4	PURPLE	18	1CIL2A-2	AMBER LAMP HTR	1CIL1G-2	GREEN LAMP PWR	-12VDC	5.00
12562522-54	12562511-54	W5	PURPLE	18	1CIL1G-2	GREEN LAMP PWR	1CIL3A-2	AMBER LAMP TRACE	-12VDC	5.00
12562522-55	12562511-55	W6	GREEN	14	GT1	GND	SCREW	ENCLOSURE MNTG	CHASSIS GND	6.00
* = SHEILDED WIRES PAIR										

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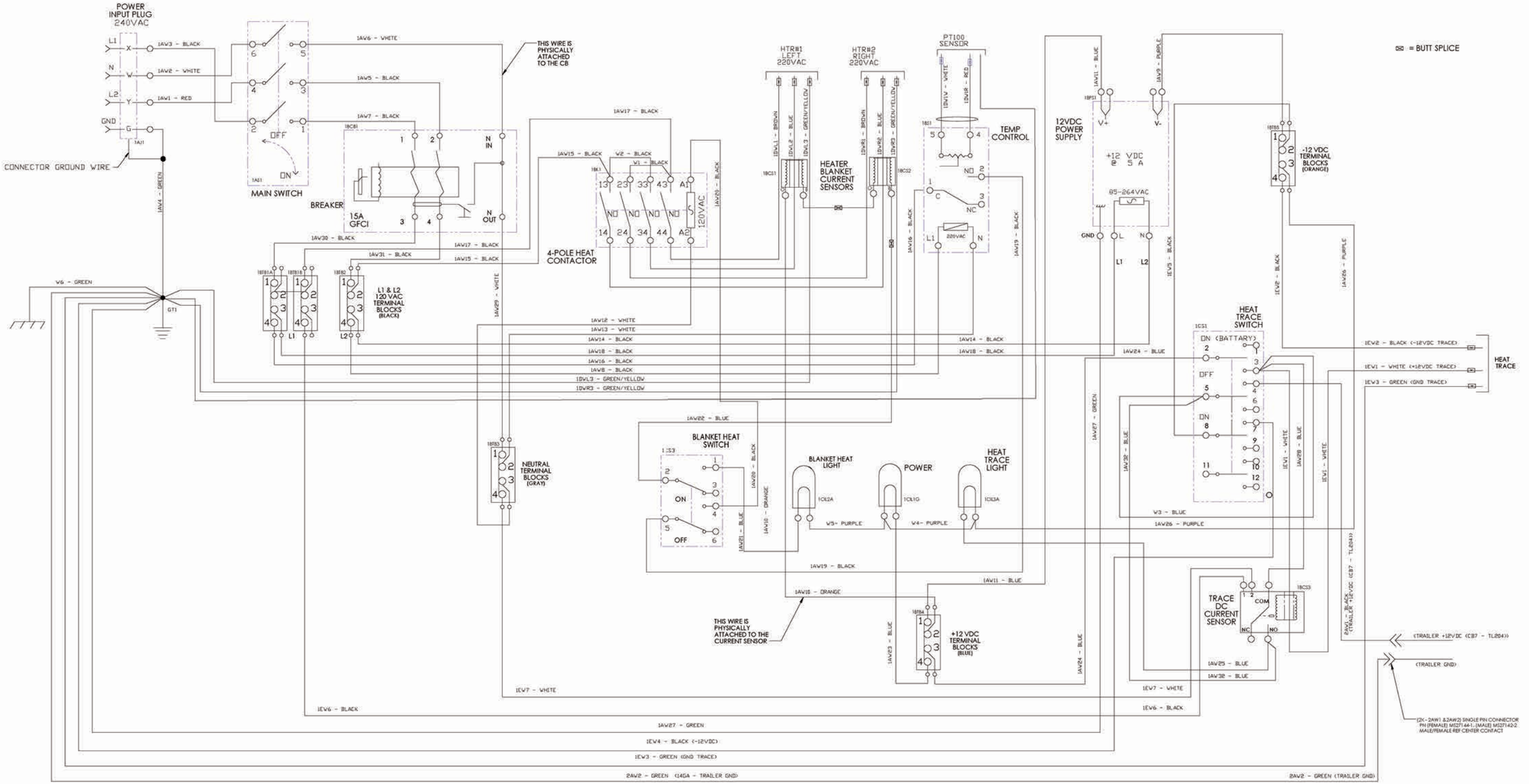

SCHEMATIC

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FO-3. Electrical Wiring Schematic.

THE METRIC SYSTEM AND EQUIVALENTS

Linear Measure

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

Weights

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Pounds
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

Liquid Measure

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

Square Measure

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.0386 Sq Miles

Cubic Measure

1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

Temperature

9/5 C° +32 = F°
5/9 (°F - 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius

APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621